The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 21. MAY 21, 1932. Vol. 12.

SOME NERVOUS DISEASES AFFECTING THE HIND QUARTERS OF THE HORSE*

W. PERRYMAN, F.R.C.V.S.

In presenting this paper to the Society, I will commence by saying that I do not intend to give the multiplicity of diseases as shown in our text-books—a course which, to my mind, is confusing and in many cases misleading and erroneous—but will endeavour to give a general outline of some of the more common phases of disease affecting the nervous system of the hind quarters of the horse as encountered by the general practitioner in routine practice.

In well-defined cases the difficulty of diagnosis is not great, but it is in those cases which have an insidious character, and particularly when one's responsibility is greatest, such as when conducting examination as to soundness, that care and every reasonable effort should be taken to detect any abnormal condition that may be likely to develop into serious nervous disease later.

DEFECTIVE SPINE, OR WEAK BACK (IMMOBILITY)

When one consults the various text-books, it is really remarkable how little is clearly defined as regards some of the commoner conditions met with, and those who have attempted description are often very confusing, *e.g.*, Williams groups together in one very short chapter "Immobilité" (term applied by French veterinarians), "Shivering," "Sprained Back," "Broken or Jinked Back," and gives less than two pages to the whole. Robertson, under the heading of "Sclerosis of the Spinal Cord," gives a train of symptoms which I believe is the same as Williams gives for "Immobilité." He says: "Rarely does paralysis in any form show itself, rather is the aberration a loss of the co-ordination of movement of the muscles of the limbs." Wallace Hoare treats this condition under the heading of "Chronic Myelitis" and quotes Robertson on "Sclerosis" in the words I have just given.

Wooldridge (p. 727) speaks of the same condition under the title of "Partial Paraplegia" and under the heading "Examination of Horses as to Soundness" (p. 614), writing of partial paralysis, says: "'Jinked Back' and 'Kidney Dropping' are terms of indefinite meaning and application, though commonly employed to indicate spinal weakness." (These defects and loss of power are caused by arterial obstruction, etc.).

I have quoted these various authors to show the diversity of nomenclature of a common condition frequently met with in general practice, and which, to say the least of it, is very confusing, and yet they all deal with the same diseased condition.

I propose to bring this condition to your notice under the heading given above: "Defective Spine, or Weak Back (Immobility)." it is commonly known to the horse fraternity as "Jinked Back," "Bobby Back," and "Broken Back." These latter expressions are not by any means scientific, but I do think that veterinary surgeons should be familiar with them as they are so often used by large horse owners and dealers, and, to them, have a very definite significance as to the nature of the trouble.

Generally the disease is of a progressive character. In the earlier stages the animal shows difficulty in backing, and later inability to do so—with marked incoördination of movement of the hind quarters, rolling gait, and crossing of the hind legs, and difficulty in turning round, the hind legs being swung out in an uncontrolled manner.

The animal is unable to back a load, and if endeavours are made to get the animal to try, the hind limbs are pushed forward and the quarters come well to the ground. With a load down-hill, the animal has little control (varying of course with the amount of weakness of the back) his own weight being the chief factor in keeping the load more or less steady. The hind feet are generally on the ground together. The animal slithers downhill.

These cases vary greatly, from those in which at the outset only slight awkwardness in carrying out the various movements mentioned is noticed, to well-defined cases manifest to the ordinary observer. No doubt many of the severe cases have a traumatic origin, and might be termed acute at the commencement, and later subside into the chronic form, at which state we are more likely to come in contact with them, and when advice is sought. When, however, we do see them at the commencement, the history is that of an accident, the animal having had a fall, or being cast in the stable, and where violence indicates injury having been done to the spinal column and the nerves

*Paper presented to the Central Division, N.V.M.A. at 10, Red Lion Square, W.C.1, on Thursday, April 14th, 1932.

emanating therefrom. No doubt violent muscular efforts cause ligamentous rupture, and in some cases fracture of the body of the vertebra, without displacement. In old animals anchylosed bones are wrenched asunder. In all such cases slaughter is the best course to adopt, even if the animal is able to stand or walk. The long course of treatment and the depreciation of value does not justify one in advising that the animal be kept alive.

Occasionally one has an obstinate client who persists in keeping such an animal. Then one is afforded a rare opportunity to watch an interesting case and see the ultimate result. Some years ago I had such an one. The animal was able to stand, but quite unable to move the hind legs from side to side — he simply swayed the quarters when pushed over. The horse was put in slings, otherwise he would never have been able to get up had he laid down. It was five months before he was put to work, of which he eventually did a fair amount. Later he was sold and I lost sight of him.

Another, of which I am glad to be able to show you the lumbar bones, was some three months in slings. Recovery was fairly good, and the animal worked in London for two years. He died of twisted bowel, and I secured the bones you now see, these showing evidence of partial fracture of a vertebra having taken place.

I have had other cases, but these are the most outstanding I can bring to your notice.

Before leaving this part of my subject, I will draw attention to diagnosis. There are cases which at first simulate chronic spinal injury. I refer to chronic brain disease, generally tumours in the lateral ventricles. The patient in those cases has the rolling, unsteady gait, incoördination of movement, mentioned earlier in this paper, and often when first seen gives the impression of injury to the back. With the attendant the latter idea generally prevails.

In chronic brain disease the animal walks, if I may say so, in a more drunken manner. The fore-limbs as well as the hind are under less control, and the head is carried low—but the chief diagnostic symptoms are exhibited when the animal is made to back. With brain tumour, as a rule, the animal is unable to flex the fore-limbs and trails the feet flat on the ground, with a sliding action, when made to go backward; whereas in injury to the lumbar region the animal is practically unable to get the hind legs backward, and if efforts are persisted in to make him do so, the limbs become tucked up under the belly. He can flex the fore-limbs.

Some three or four years ago I exhibited rather a fine specimen of psammoma at one of our meetings. In that case at first I had some difficulty in convincing the owners that the brain was the seat of the trouble, and not the back. Later, as the case progressed, there was no difficulty.

I have dwelt rather long on this part of my subject as it is of grave importance to the practitioner, particularly to the young graduate. Horse dealers have a good knowledge of this class of case, and the unscrupulous ones endeavour to bluff intending purchasers: they will give a repository warranty knowing that the time limit is short and hoping the defect will not be readily discovered.

The pathological conditions I will endeavour to deal with later when I have spoken of other conditions of disease affecting the hind quarters.

SHIVERING

This condition is familiar to you all and I need not give a detailed account of the symptoms. It is a nervous affection more often seen in the heavier than in the lighter breeds.

The recognition of the disease when advanced is not difficult. It is in those cases which are described as "latent and intermittent" that difficulty arises. I will say at once that I believe it does not develop in a few hours (I know that view has been held by good authorities), but that it is of slow and insidious character, and often it is not until some unusual excitant has operated that the symptoms become really manifest.

In established cases any condition that causes pain or excitement aggravates the symptoms in a very alarming fashion, particularly injuries to the coronet and foot. Specially would I mention sand-crack and picked-up nail, and specific diseases. Not only are the symptoms alarming and acute, but the animal is difficult to manage and treat. Well do I remember having a midnight call some distance from home. The animal was a known shiverer. The attendant could not make out what was wrong. On arrival, I found the horse blowing, shivering, sweating, and in a very excitable condition, and altogether showing a very mysterious train of symptoms. After watching the animal for some time, I detected lameness on one hind leg. With difficulty I examined the foot, and was rewarded with a nail well driven home in the side of the frog. The horse recovered.

I do not agree with those who say that the horse is not able to back or hold a load: my experience is quite to the contrary. The shivering action is accentuated but the muscular power does not seem to be lessened. I do agree, however, that it is not every carman who can, and will, work a shiverer. Here I think very important and valuable advice can be given to the owner, *viz.*, that the driver should be steady and patient with the horse, should not shout or excite the animal, and particularly when

starting to back. The animal should be allowed time for the limbs to get over the first spasmodic action: it is when the animal first moves that the most violent muscular spasm takes place.

I watched an animal over a period of some nine years. He was a pronounced shiverer at five years old, yet he was capable of drawing and backing three tons; altogether he was a good horse. One man drove him practically the whole time. I think only once was he laid by, and then for nearly three months—due to suppurating sand-crack. He was a difficult patient, owing to the bad symptoms being present that I have previously mentioned in such cases. He recovered and did some years of work afterwards, being eventually cast from the firm. By a coincidence this horse came under my notice some 18 months later. I obtained the bones, but these have since been lost.

Shiverers do lie down, and have little difficulty in rising, but they should have plenty of room—a loose box for preference.

When endeavouring to detect shivering, I think by far the best method is to turn the horse from side to side in a stall. Then have the animal pushed back quickly as far as the head-stall rope will allow. The sudden check will often produce the symptoms.

Again, I have examined animals without detecting anything until they have been rather violently tried in harness. I have known a recognised shiverer to pass all these tests without exhibiting any characteristic symptoms at all. Fortunately for us, these cases are rare and are so-called latent ones: no doubt they develop into pronounced cases as they get older.

I am of the opinion that shivering is the most hereditary nervous disease we have in the horse.

STRINGHALT

The condition is a spasmodic flexion of one or both hind legs, with the characteristic symptoms of which you are familiar. Generally seen in light horses, but affects all breeds. The highly-sensitive type of horse is that most prone to the complaint. It is progressive in character and with advancing years becomes more defined. That it is clearly allied pathologically to shivering I feel convinced, but also that other groups of muscles are involved.

In the earlier stages the characteristic action may only be seen occasionally, and then when the animal first commences to move, or when turned sharply. Most text-books give instances of its occurrence in the fore-legs, but they are rare: I think I have only seen two cases.

With the exception of its unsightly action little inconvenience is caused and the animal is able to do reasonable work. Occasionally, however, the symptoms become aggravated, and trouble arises from injuries to the pastern and coronet. I had one such case where both hind legs were badly affected and, in spite of protective boots, wounds were constantly occurring. Something had to be done, so I performed peroneal tenotomy and with a fair measure of success. The wounds healed by first intention and the animal worked for some months; the flexion of the hocks was not nearly so marked. The animal was eventually sold, so I lost sight of it.

OBTURATOR PARALYSIS

This condition is fairly familiar to most practitioners and is a sequel to fracture of the pelvis involving the pubis and obturator foramen: through the latter the obturator nerve passes outside the pelvis to the adductors of the thigh. Direct injury to the nerve may ensue, or the resultant callus thrown out (and which is generally fairly extensive) may cause pressure on and loss of function in the muscles on the inner part of the limb, the result being that the action of the abductors is in excess of the nerve force, which causes the limb to swing outward in an unmistakable manner during progression: the limb appears to rotate from the hip joint. The subjects of this affection seldom entirely lose this action, although as absorption of the callus takes place improvement is marked and the animal may go sound.

One specimen (exhibited) was a well-defined case, which necessitated altogether five months' rest (three months at grass). I advised the owner not to work the animal in London again, on account of the liability to slip about on the stones. The animal was brought back owing to the inability to provide suitable work in the country and worked for two years. She provided me with the opportunity of getting the pelvis by dying of a twisted bowel. It is the one case I have been able to follow right through to the end. The other specimen is from a horse I had under my charge for some years.

PARALYSIS OF BLADDER, RECTUM AND TAIL

This is of rare occurrence. I specially mention this as I consider it a slight variation from the other nervous affections I am dealing with. I can call to mind three well-defined cases. In all three the conditions were the same—inability to pass urine and fæces—all motor power of the tail lost, and, as far as I was able, I could detect no other lesions affecting the muscles of the quarter.

In the first case I was unable to gather any information from colleagues as regards its pathology except that it was a nervous condition. Every opportunity and help was afforded to treat the case. The bladder was emptied twice daily to begin with, and later once a day; also the rectum. After nine weeks the animal was destroyed. I went no less than three times

to complete the *post-mortem*, even to the extent of getting the spinal cord out of the bony canal. The bones (exhibited) were boiled. You will see a bony growth, between the third and fourth lumbar vertebræ, which it was very gratifying to me to find. I published the case, which was considered of such interest that the account was translated into one of the French journals.

I am opinion to-day, however, that I did not find out the true cause of the trouble, or at least not all of it.

Of the other two cases, one was destroyed and the lumbar bones showed no abnormality. The third horse was sold at one of the horse repositories. He was an exceedingly smart-looking animal, so I expect the purchaser had good cause to be very sorry. I would say that it was not at my suggestion that he was sent for public auction. I should have preferred to have made a *post-mortem*.

Wallis Hoare and Wooldridge make mention of this condition.

FLEXOR METATARSI AND EXTENSOR PEDIS PARALYSIS

The last item I intend bringing to your notice is a condition which I have no doubt many of you have seen; also that many will disagree with me as to its pathological condition being entirely nerve injury.

Such cases are characterised by the animal being able to stand fairly well, but, when moved, the limb is jerked upwards and backwards. The gastrocnemii tendons become slack and appear loose and in folds. The limb is unable to be fully extended and the hock and fetlock fall forward.

I have seen all stages of these cases, from slight to very severe. The photograph shown was the worst case I have seen. Even in less pronounced cases the gastrocnemii tendons exhibit the looseness mentioned, which is always a source of surprise to the owners.

Williams (p. 297) gives an illustration under the heading of "Laceration of the Flexor Metatarsi Muscle." My photograph, I venture to say, depicts the same condition. The patient was a very big cart-horse, 17 h.h. You will see with what ease the leg was carried backward and held with one hand almost in a straight line from the stifle. This particular case was under treatment for only a short time. Improvement did take place, and the animal was sent to the country. Unfortunately, I lost sight of him, so could not follow the case to the end.

I have not seen that swelling of the anterior muscles of the limb that Williams describes; in fact, the absence of any inflammatory condition is the most characteristic feature.

Wallis Hoare mentions paralysis of the external popliteal nerve: a very short account, dealing with the same condition as that of which I am now speaking. He, however, does not refer to the gastrocnemii tendons.

Wooldridge speaks of paralysis of the external popliteal in very much the same language. I consider the condition to be undoubtedly a paralysis of the muscles I have named. Some may say it is the triceps cruralis muscles that are affected. I attribute the cause to direct injury and paralysis to the anterior tibial nerve, more than to that of its satellite nerve the popliteal. It is the reverse of the condition that exists in stringhalt, where there is an excess of sensory impulse, but where, I believe, the same groups of muscles are involved.

Pathological Classification

In bringing these cases to your notice, I have so far refrained from making mention of many pathological lesions or physiological defects of function of the structures involved.

The first condition—that of "weak back" or "bobby back" immobility—is to my mind essentially a disease affecting the motor tracts of the nerves.

Shivering and stringhalt — physiological defects where the sensory nerves are chiefly defective in function.

Paralysis of the bladder, rectum and tail—a physiological defect where both spinal and sympathetic nerves are involved.

Obturator paralysis and anterior tibial paralysis—physiological defects where direct traumatic injury has caused a loss of function of the nerves involved.

I have attempted this classification to facilitate discussion. There are several other affections which I have not mentioned, but which I think can readily be included under one of these headings.

I will state at once that, in my opinion, none of the diseases I have mentioned as affecting the hind quarters have their origin in the brain, very few in the spinal cord (and those only in a modified form), but that the disease is extraneous to the spinal cord, the chief seat being the nerves after they have left the cord, the ganglia or the superior sensory nerves, and the various plexuses situated beneath the lumbar and sacral regions. If the brain were the seat of mischief, I think we should find other manifestations in other parts or limbs. This is well exemplified in brain tumour, where a general want of coördination is well marked.

Immobility.—(The term I like best for weak back.)

In this condition sufficient evidence is manifest on examining the bones to enable one to judge that a great deal of pressure exists on the nerves emerging from the intervertebral gaps, which causes defective nerve supply to the muscles of the back and loins. No doubt

such pressure arises from chronic inflammatory thickening of the ligamentous structures, calcification of some, and anchylosis of the various articulations, particularly those of the oblique.

Where partial fracture has taken place the resultant callus must affect materially all nerves and articulations.

As you will see in the specimens, a callus is thrown out, generally on one side. I would suggest this as an explanation: that when such animals get down, they are unable to rise until they have been turned over, so giving the unaffected side more power to rise. When we have all this evidence, I think it is quite superfluous to seek a cause in the brain.

Shivering.—This is a violent spasmodic (involuntary) contraction of groups of muscles, supplied by the cerebro-spinal nervous system, which, under normal conditions, are directly under voluntary control. A physiological derangement exists whereby the nervous functions are so altered that the patient has momentarily no control of certain muscles supplied by groups of nerves.

One must look, I think, to the sensory nerves and their ganglia as being at fault. That the motor tracts are not the seat of mischief is shown by the violent muscular contraction that takes place, and by the animal being quite capable of moving heavy loads.

One must consider the reflex action of the whole subject. Before muscular contraction can take place, a stimulus through the sensory nerves must be sent to a nerve centre, either ganglionic, spinal or brain. This is transmitted to the motor nerve, and eventually results in a muscular contraction. It is a significant fact that all the spinal nerves have ganglia on their superior or sensory branches, but none on the inferior motor branches. Ganglia are composed of cells and nerve fibres.

Kirke ("Physiology," p. 577), speaking of the sympathetic nervous system, says: "Stimuli conveyed through ganglia are orderly and like natural movement, while those excited through nerves without ganglia are convulsive and disorderly." Functionally, nerve cells and nerve fibres differ in this important respect, that the former (cells) generate and conduct nerve force, while the latter (fibres) conduct it. The difference may be compared to that which exists in a telegraphic apparatus between the galvanic battery and the wires, the former generating and conducting electricity, and the latter merely conducting it.

The cerebro-spinal nervous centres and their ganglia are also so closely connected with the proper sympathetic ganglia that neither of them can be said to be independent of the other, each as a rule, and under ordinary circumstances, governing its own domain but always liable to be influenced by the other.

Of the pathological conditions that are likely to bring about shivering, very little is said by various authors. Robertson, under the heading of "Chorea," a term which he applies to shiverers, mentions "Visible sclerotic changes in the brain and cord with effusion in the subarachnoid cavities. Vascular injection of the chord and of the central ganglia of the brain, the optic thalami and corpora striata."

Wallis Hoare says: "We must confess that nothing is definitely known with reference to the etiology of the affection," and quotes McCall (1910): "Careful *post-mortem* examination, also histological examination, of the brain and spinal cord did not reveal any lesions." Neither Williams nor Wooldridge ventures to suggest the pathological causes.

I have previously stated that I believe it to be a physiological defect due to improper functioning of one or more of the nervous elements entering into the nerve supply of the muscles involved. I have not seen it advanced or suggested that any special attention has been given to the ganglia or sensory nerves external to the spinal cord or to the lumbo-sacral plexus, from which the gluteal and other large nerves have their origin. I would respectfully suggest to our pathologists that careful microscopical examination be directed to the cellular elements entering into their composition, with special reference to the nerve corpuscles. Personally, I think that the seat of the trouble is here located.

Stringhalt.—What I have said of shivering I think largely applies to this condition. That other muscles are affected by defective nerve function there is no doubt. The muscles chiefly concerned are the flexors of the hock, and the extensor pedis, which, by their spasmodic contraction, violently flex the joint, the chief nerve supply to these muscles being the anterior tibial.

The condition of stringhalt, like that of shivering, has been ascribed to numerous pathological conditions. Where it is unilateral, I consider there is good reason to believe some peripheral cause may exist, but when bi-lateral, I think the cause is nearer to the spine, and consideration should be given to the plexus from which the sciatic nerve originates.

Williams speaks of this disease under the heading of "Chorea." Other authorities see no resemblance. If I may venture an opinion, I think the older writers are right and that both are choreic in character. I will leave it there, for you to express your own opinions.

Obturator Paralysis.—There is nothing further to state regarding this, other than what I have already given.

Flexor Metatarsi and Extensor Pedis Paralysis.—I have stated my views as to the location and nerve involved.

Paralysis of Bladder, Rectum and Tail.—This is a condition where the cerebro-spinal and sympathetic nerves are involved, the latter supplying the bladder, colon and rectum, and the former the tail. The specimen shown would undoubtedly have some influence on the nerves supplying the lumbar and sacral plexuses, but would not affect the tail, that being supplied by the nerves from the cauda equina, which go to form the coccygeal nerves.

Treatment.—Little need be said on this point. Rest and massage are the greatest factors where cases are hopeful. I am a strong advocate of slinging, where injuries to back and hind legs are concerned. In many cases, if the animal is allowed down, he will probably never rise again. Much damage is often done to the head of the affected subject by his constant attempts to get up, if not slung.

I must apologise for the length of this paper. My excuse is that this subject could only be dealt with effectively by going rather fully into those cases that have more than a passing interest for the professional man.

Discussion

Mr. J. W. McIntosh, who opened the discussion, said that he would like to compliment his old friend Mr. Perryman on his most interesting contribution and on his courage in introducing a subject of this kind before a society that was now rapidly becoming canine and feline in its interests, and at a time, too, when the horse—at any rate in London—appeared to be at a discount.

Mr. Perryman, as they all knew, was an enthusiast in all matters appertaining to his profession, and his long and carefully recorded experiences had always been readily and generously placed at the disposal of his fellow-members; his contribution that evening was no exception to that rule. It was not many busy practitioners who took the trouble to make such careful records as evidenced by the many specimens he had brought with him that night to illustrate and support his arguments.

The conditions dealt with were full of interest to the inquiring mind, and very important from the horse-owner's point of view, for unless a horse was capable of putting forth the maximum of effort, it was not a sound investment and it was the veterinary surgeon's duty to advise accordingly. In doing so, he must be careful to guard himself against any hasty conclusion which might involve loss to the owner, while he must at the same time, protect him from risks and responsibilities to which any or all of those conditions might give rise. The essayist had stated, in his opening remarks, that few visitors had devoted much attention to those common ailments. His view was that those writers who had attempted least, had told them most, for the classifications which had been attempted were all very confusing and in practice often misleading.

The title of Mr. Perryman's paper, 'Nervous Diseases affecting the Hind Quarters of the Horse,' should have been 'Neuro-Muscular Affections of the Hind Quarters of the Horse'—for it was doubtful if any of the conditions he described were of purely nervous origin.

The first condition to which the writer gave prominence was the condition known as "Immobility,"—popularly termed "strained back," "weak back," "bobby back," etc.

Was that really a nervous effection? His experience led him to believe that the vast majority of such cases were not of nervous origin, but were either traumatic or constitutional in their onset. It would be admitted that the nervous system eventually became involved—as was the case in most diseases—but it was not primarily affected in the majority of cases. Of course the difficulty was in knowing how far the term covered affections which were characterised clinically by loss or partial loss of the functional activities and control of the hind quarters: the term had a very indefinite meaning and seemed to embrace all sorts of conditions presenting clinical similarities although arising from causes altogether different.

Let them, for a moment, consider the class of animal which appeared to be most frequently affected. He thought there could be no question that those animals engaged in heavy haulage work were particularly prone to developments of this kind; it was quite a common associate of advancing years and honest toil, when efforts involved great 'strain' on the hind quarters and loins—in negotiating heavy lifts, very often on slippery surfaces and backing under similar conditions. It was, then, he thought, in this direction that we must look for the primary cause of the disease. A long experience of that class of animal had more or less convinced him that the onset of the complaint was associated with the psoæ muscles and the iliacus and sartorius: overfunctioning of these led to nutritional changes in the substance of the muscles, and this, if persisted in from day to day, gave rise to structural changes, the muscles eventually losing their contractile powers in varying degrees. There was thus produced a condition characterised clinically as "immobility," or lack of proper coordination of the movements of the hind quarters. In addition, and from the same causes, the pads of cartilaginous tissue between the vertebræ—particularly the lumbar and dorsal—became converted into bone when that portion of the spinal column became stiff and unyielding: the vertebral column, as they all knew, was normally extremely elastic and mobile. This, he thought, was the common and usual source of origin of "immobility," but it was by no means the only cause. Traumatic injuries to the region of the loins and hind extremities from falls, getting cast in the stall, etc., etc., might and did give rise to permanent injury and developments presenting degrees of immobility. They found it, too, following upon constitutional ailments such as influenza, strangles, rheumatism, etc.

Mr. Perryman had said nothing regarding treatment. Unfortunately, the onset of this condition was not manifested clinically, unless it arose from severe injuries or constitutional ailments, but the careful observer with experience could frequently notice indications which pointed to developments of this kind, such as slight stiffness of movement particularly over the loins. When he noticed conditions of that kind he immediately eased up the animal or threw him out of work entirely.

Shivering.—He was of opinion that this condition was probably purely a nervous one, manifested (mainly during the acts of "backing" or turning round) by a trembling or shivering, the tail being spasmodically elevated and depressed. In its early stages, it was not always possible to detect its presence. He recalled an experience which he had himself undergone—many years ago now

—in a Clydesdale entire of high repute, which he had cause to examine for a purchaser. After a very careful examination and with a particular regard for anything of an hereditary character, he passed the horse as "sound." The purchaser, a very practical man himself, informed him, a few days later, that he had noticed, when moving the horse round in his loose-box, what he regarded as a slightly suspicious movement of the tail. Being naturally somewhat concerned, he (Mr. McIntosh) proceeded to the farm and again closely examined the animal and applied all known tests, but failed to observe any indication of even the slightest suspicion. Repeated examinations were made at intervals not only by the owner but by the speaker, with no result, until about three weeks later, when the animal showed unmistakable symptoms. Its progress then seemed to be very rapid, and within six months the horse was as bad a shiverer as anyone could wish to see and of course useless for the purpose of stock getting and a heavy loss to the owner. He was glad to be able to tell them that, notwithstanding that unfortunate experience, he retained the confidence of his client. He took a less favourable view of a shiverer than did Mr. Perryman, for while some animals might serve a useful purpose for a time, the disease was usually very progressive. Many of these animals became dangerous, not only in work but in the stable; they were invariably difficult to shoe, and, altogether, were very undesirable animals to have about. They seldom "lay down," and if they did go down many were difficult to get up. Most were of a highly nervous temperament and greatly exaggerated symptoms would be observed when they were suffering from other ailments, particularly injuries to the extremities.

Stringhalt.—This condition, too, he believed to be of nervous origin. Any derangement affecting important nerve centres might produce either an exalted function, or the reverse, or even paralysis. Here again the symptoms might be very intermittent. The condition usually affected one or both hind legs, very seldom a fore-limb. It was characterised by a sharp, sudden jerk of the limb from the ground—a slight pause with an equally sudden slap downwards. While this condition was rather unsightly, and much more common, he thought, in light horses than in heavy, he did not regard it as anything like as serious as shivering.

He had no views to offer with regard to the source of these functional peculiarities. Mr. Perryman did not think that any of these conditions had their origin in the brain, and very few in the spinal cord, but that the source was extraneous to these, possibly in the ganglion or local nerve centres. If he (Mr. McIntosh) was to venture any opinion at all, he would incline to the view that these conditions were due to an inherited defect of a physiological character in the sensory structure of the spinal cord. He was convinced that shivering and stringhalt were hereditary.

Obturator Paralysis.—He agreed with the writer that this condition was brought about by interference with the nerve, as it passed over the edge of the foramen, leading to a degree of paralysis of the abductors of the limb—the pectineus and gracilis muscles.

The other matters referred to by Mr. Perryman he would leave to other speakers, as he had already exceeded his time. He would like to say, however, that he was particularly interested in the whole subject and that when he had more time he hoped to read and digest more carefully the very excellent contribution which they had listened to that evening. (Applause).

Mr. H. D. Jones, having expressed his warm thanks to Mr. Perryman for his very interesting paper, said that he thought that Mr. McIntosh had covered all the ground for its discussion so fully that he had really left the others with little to say.

He quite agreed with Mr. McIntosh's observations in regard to "bobby back" or "jinked back": that it was really a spinal injury and due to anchylosis arising therefrom, also that the nerve trouble that followed was secondary to the anchylosis.

Mr. McIntosh had made no mention of flexor metatarsi lameness. He (Mr. Jones) was of opinion that that was not a nervous trouble at all, but due to the flexor metatarsi entirely. He had never seen recovery in a horse affected with stringhalt, but he thought they had all had experience of numerous cases of so-called "flexor metatarsi lameness" that had ultimately got better.

There was a condition to which he was hoping that Mr. Perryman would refer, though he had only seen it mentioned in text-books, and that was the condition in which a horse, not affected with obturator trouble, swung his leg—not in action, as in that affection, but after getting it on the ground. He desired to know if Mr. Perryman regarded that as a nervous condition, or if he could tell them to what it was due.

Professor J. Macqueen stated that, with Mr. Jones, he did not think that there was much more to say, because Mr. McIntosh had covered the ground for discussion fairly well.

At the beginning of Mr. Perryman's excellent paper he was rather surprised at certain terms he used. "Immobility" to him had never meant anything, and he failed to see how it could be applied to the affections that Mr. Perryman had mentioned that evening. His impression of immobility was that in this country for many years, it was attributed to disturbance of the digestive apparatus and described as "sleepy staggers."

Other terms used—"bobby back," "jinked back"—were nearly meaningless, and such terms should not be associated with any active osseous lesion. From his observation of these cases he had come to the conclusion that the so-called "kidney-dropping," or "jinked back," was due to circulatory obstruction brought about when the horse was exercised freely and was not likely to be made manifest when the animal was moving at a moderate pace. In such cases what happened, he thought, was this: so long as the horse moved at a walk or at a trot he showed no loss of power in the hind quarters; but when exercised at a fast canter after a time he gradually sank to the ground on his haunches, sitting like a dog. In these cases there was no obstruction of the aorta or iliac artery, and no sweating or struggling. When the horse had been down a few minutes he got up of his own accord. He could not say that he had ever seen a case of the kind in a cart horse: his cases had always been in light horses.

With regard to shivering, which seemed to be the most popular item, he had seen shivering in a foal a few months old and in many young horses. In these early cases he had always been inclined to attribute the origin of shivering to infection arising from a common cold, strangles, influenza, or other disease of that sort, and he did not agree with Mr. Perryman that the brain was never involved. He believed that the disease mainly affected the spinal cord in the majority of cases, but he could not exclude the brain altogether in certain cases. Sometimes they would find a shiverer that was not only affected in the

hind and fore limbs but also in the head—the muscles of the lips, nostrils, eyelids, and ears showing the peculiar tremor of shivering. [Mr. McIntosh: "Chorea"] Chorea was a constant twitching, while shivering was remarkable for its intermittency.

He agreed with Mr. McIntosh that a shiverer, even a slight shiverer, was not the right kind of horse to recommend for purchase, because shivering was a progressive disease and the rate of progress was largely influenced by the amount of work. There were shiverers that were capable of performing ordinary work, but there came a time in all these cases when the horse became unfit for it. He had seen shiverers that backed quite well; others that could not back at all. With regard to saddle horses, he had known shiverers that continued quite serviceable for three, four, or more years, but finally they began to fail.

As to the detection of shivering, an established case was easily recognised: but the slight case offered much difficulty in diagnosis. It was most difficult to discover slight shivering, and if the horse had been rested for three or four months the probability was that it would pass the most careful examination.

Concerning stringhalt, he noticed that Mr. Perryman seemed to think that it was entirely an effect of flexor contraction; but he would point out that there was also an extensor stringhalt, in which the foot forcibly struck the ground, sometimes breaking the shoe. He did not think that stringhalt should be considered as being of the same seriousness as shivering. He had seen stringhalt occur immediately after the application of a blister to the hind limbs; in other cases the stringhalt began as an intermittent affection, with long intervals between the manifestations. He was not quite sure whether Mr. Perryman maintained that stringhalt was progressive and not likely to get better. He (the speaker) maintained that certain cases of stringhalt did improve, that the period of intermittency was likely to extend and that the horse eventually, without treatment of any sort, might become quite passable.

With regard to flexor metatarsi lameness, Mr. Perryman regarded it as a nervous affection, but experiments had proved that it could be produced by a section of the tendinous flexor metatarsi. All cases of flexor metatarsi lameness were not curable; a case might continue in spite of rest and treatment. Treatment, of course, was rather empirical, for the reason that one did not know very well where to apply it.

The only other point to which he desired to allude was paralysis of the bladder and rectum. In his experience some of these cases—he would not say all—were the result of fracture: fracture of the first two or three tail bones, fracture of the sacrum or fracture a little further forward. They were very hopeless cases, and in his experience if one gave the horse a period of six weeks and there was no apparent improvement the animal should be destroyed.

Mr. Herbert King thanked Mr. Perryman for his very interesting essay and added that there were one or two points he desired to have cleared up and which had been mentioned by Professor Macqueen. He referred, in particular, to what used to be called "kidney dropping." He was not quite sure even now whether that was due to a congestion of the cord, as Professor Macqueen had suggested, or to plugging of the iliacs by thrombi. He did not feel that the two things were identical, *i.e.*, what they knew as "weak back" and "bobby back." In the one one got a want of coördination in the hind limbs and inability to back, and in the other he had a very definite recollection of examining a horse which was purchased at a repository and nothing could be seen of the condition until the horse had been driven for a considerable period; then the animal began to lose the use of both hind limbs. The question was, was it due to a nervous condition arising from congestion of the spinal cord, or to thrombosis of the aorta before the iliacs were given off? The condition was not very often met with and he had only seen two or three cases, where the horse had been continued in work under forcible driving, that had shewn this condition. With regard to flexor metatarsi lameness, he had never looked upon that as a nervous condition and the cases with which he had met had generally been in cab horses—they had sustained it through violent kicking. He had attributed it to rupture of some of the fibres, probably at the site of attachment. In these cases many got well with prolonged rest and treatment.

Professor J. McCunn, when called on by the President, said that he felt very diffident in getting up in front of all those equine experts and giving any expression of opinion, but he had been very interested in Mr. Perryman's dissertation that evening.

He was very pleased to note, first, that it occurred to Mr. Perryman that there was such a clinical condition as "bobby back." He remembered that, at the Royal Veterinary College, when they had a film shown he was subjected to a certain amount of ridicule because he exhibited a horse on the film which, he said, was the subject of a condition he had always known, and had always been so instructed, as "bobby back." "Bobby back" was not shivering and it was not stringhalt; it was, as Mr. King had said, an inco-ordination of the muscles of the loins and quarters, and only indirectly was it a condition of inco-ordination of the muscles of the hind leg. To his mind, in many cases it was a precursor of some more grave disease.

Shivering was the one thing of which he was frightened whenever he examined a cart horse: he was more afraid of it than of ringbone, sidebone, or any other defect in the animal. It was often hard to detect and very hard to describe but when one saw an animal affected with shivering go away from one, one would notice that it did not go straight, and that when it turned it did not turn with its leg flexed in the manner that a normal horse would flex it, and that often that led it to cock its leg slightly to assist it to turn. There was one horse which probably he should have rejected at the time of examination because it showed this peculiarity to a slight degree, but it was such a good-looking horse and such a clean horse otherwise, that he advised purchase. That was six years ago. He worked exceedingly well up to four years ago when, one Sunday, he (Professor McCunn) went to see these horses and had a look at this particular animal. He got him to go over in his stall, when he showed pronounced signs of being a real shiverer. Time passed and during the recent epidemic of influenza this horse, amongst others, had an attack. The speaker was told that it was the greatest job on earth to get him from the stable to the loose box; the animal had absolutely no co-ordination in his back muscles at all and they had practically to lift him over there. The horse got over his influenza quite well, and now he was just a simple shiverer. "Bobby back" was, he thought, one of the "snags" of cart horse examination. All the dealers knew of it, and they could often disguise it, as Professor Macqueen had said, by resting the horse for a time. He had often wondered if there were any association

between this condition and the fact that it was rarely met with in undocked horses; indeed, the shorter the horse was docked the more likely one was to find it.

Concerning the condition of "kidney dropping" he believed they were at cross-purposes, because he thought that the real "kidney dropper" was one that had thrombosis of his iliac arteries. The chain of symptoms there was typical. In three definite cases he had seen and followed to *post-mortem* examination, in each case, where they were vigorously exercised, the horse after about five or six minutes went down without giving much warning. The condition that had been confused with "kidney dropping" was a separate entity and was one in regard to which he agreed with Professor Macqueen (although he had no personal *post-mortem* evidence to support the view) that it must be due to some interference with the blood supply to the lumbar cord: it might be due to pressure from outside the vessels, or to some injury or arterio-sclerotic charges in the small vessels that passed through the intervertebral foramina. In one of the horses so affected it was practically proved that the arterio-sclerotic charges in the lumbar vessels were the cause of the trouble.

Concerning flexor metatarsi injury, he agreed with Professor Macqueen that it was of a local nature and not nervous in origin. It was quite within the bounds of possibility that, if one had a paralysis of the external popliteal nerve which supplied this muscle, paralysis would ensue, but one could not get that without also getting paralysis of the extensor pedis and probably of the peroneus as well; therefore, he thought that the nervous lesion theory of origin could be ruled out..

His own view was that shivering and stringhalt were disorders of function, not organic diseases, because if those lesions of the spine which Mr. Perryman had so kindly shown them that evening caused those troubles, every cart horse that worked in London for any period must suffer from those symptoms, for if they went to the horse slaughterers they would find similar osteo-arthritic charges in every one of the cart horses they chose to open. If the disease were functional in nature they would probably see nothing. Shivering was very like ataxia: in many of these cases nothing was to be seen.

He thought that the solution of the problem was in all likelihood a physiological one. A thing that helped such a functional supposition was the fact that a shivering horse that sustained any little injury or became the victim of any infection always exhibited more pronounced symptoms than did an otherwise normal animal. The solution of the problem might be found if they could get someone who was bold enough to do neurectomies and neurotomies on these nerves in the same way as had been done on those governing the functioning of the muscles of the heart. A considerable amount of work had been done on the functions of the sympathetic system by an Australian, Doctor Hunter, who unfortunately died in the midst of his researches.

In stringhalt intermittency was frequently a factor causing great anxiety. He saw a police horse, not long ago, which had stringhalt in his near hind on some days and in his off hind on other days.

He was interested to read, a short time ago in the *Record*, Mr. King's remarks on the influenza epidemic, because he saw a number of the affected horses. He had experienced similar cases and had not been able to ascertain that they were in fact suffering from influenza—he would have said that quite a lot of them were shiverers. This condition cleared up as the influenza cleared up—a fact which lent some credence to Professor Macqueen's theory that shivering was the result of some infection.

The President (Major Hamilton Kirk) at this point requested the meeting to excuse his further attendance, as he had another function to attend. Before he left, however, he would like to thank Mr. Perryman for the very practical paper he had given them. He would have wished to have said a few words upon the paper himself, but if they would excuse him he would ask Mr. McIntosh to take his place.

Mr. McIntosh, having complied with the President's request, Major R. H. Stalker observed that, with regard to shivering, he was fortunate or unfortunate enough to have forty cases of equine rabies in two months, and in three of these cases the only unusual symptoms were those of shivering. These only lasted for six hours, when general paralysis set in and the horses got down and died.

Dr. H. Fox asked if any Fellow had seen a case of shivering following shell-shock in the horse.

Mr. R. Eagleshам thanked Mr. Perryman for his very able clinical paper; he thought he had had the pleasure, some years ago, of hearing him discourse on some part of his present subject, on which occassion it was agreed that that Society should purchase good cases of horses affected with stringhalt and shivering, for dissection, but he had never heard that anything further had been done in the matter.

Most of the conditions mentioned by Mr. Perryman he had met with in practice. He had often seen cases affecting the spine following influenza, strangles, and pneumonia, due, he thought, to toxæmic poisoning causing changes in the spinal cord and blood vessels. It was difficult in old-standing cases arising from this cause, without knowing their history, to distinguish between them and those cases due to anchylosis of the spine. Some animals so affected would do a lot of work, but were not very good at backing a load.

In his view, flexor metatarsi lameness was due to strain as well as injuries. He had seen it in shunt-horses through getting fast in the chains. Some of these cases did improve but they never completely recovered. As far as stringhalt and shivering were concerned, he agreed with the majority of the speakers that they were due to nervous troubles.

THE REPLY

Mr. Perryman, in the course of his reply to the points raised in the discussion, first thanked the Fellows for the sympathetic way in which they had dealt with his paper. He had not expected them to agree with everything that he had said, nor had they done so, by any means, but there certainly had not been a disconcerting measure of disagreement in the discussion.

He was deeply indebted to Mr. McIntosh for starting the discussion and expressed his regret if the opener had, through a misunderstanding, had less time than he desired in which to assimilate the contents of the paper.

Mr. McIntosh mentioned that under the first heading he (Mr. Perryman) had dealt with "jinked back" and that he thought its origin to be more muscular than nervous, due to the great muscular strain to which heavy horses were subjected in London. He (the speaker) did not quite agree with that statement; he certainly thought that the

trouble with heavy horses was due more to derangement of the ligamentous structures surrounding the vertebræ; that in due course set up a chronic condition, the articulations eventually becoming thickened and calcified, so causing pressure which produced inability and loss of muscular power.. He thought that if the cerebellum were much affected far more alarming symptoms would be exhibited and the condition produced would not come under the subject of his heading, which was intended to cover cases seen in every-day practice.

Mr. McIntosh mentioned that he did not agree with him about shiverers and backing, but his (Mr. Perryman's) point was that in general practice one had to tackle these cases; one could not discard them all, and it was up to one to tell one's client that care must be exercised in backing the horse. The greatest precautions should be taken that the affected animal did not get nervous and excited, and owners should be especially warned about injuries to the feet and coronet; no horse was more difficult to manage in regard to getting his leg up, or to doing anything about the feet, than was a shiverer.

In regard to lying down, he did not say that all shiverers went down: many horses did not lie down at all, for no apparent reason. If shiverers had sufficient room they would get up and down. Animals affected with "jinked back," however, fell down and stayed down: it was a good plan to put a cross-bar or chain behind them for support.

Both Mr. McIntosh and Doctor McCunn had characterised shivering and stringhalt as being physiological defects. He agreed with that, and thought that our physiologists and pathologists had good scope for enquiry there. His own view was that there was some derangement of the cellular elements of the ganglia which had some controlling influence over the nerves that went through the spinal column. The sensory nerves were to be likened to a galvanic battery, the current from which was intermittent; consequently, the nerve force was broken down and regulated as it passed through the ganglia—a process which, he thought, accounted for the occurrence of shivering and stringhalt.

Mr. McIntosh had also mentioned obturator paralysis. He did not think that there was much to discuss about that, for it seemed that they agreed in regard to it. Affected subjects recovered to a certain extent, but they always threw the leg out; no doubt there was muscular debility through faulty nerve supply.

Mr. Jones made reference to rotation of the hock; he (Mr. Perryman) did not think that that was in any way nervous trouble but was probably due to lack of co-ordination between the abductor and adductor muscles. In his view the condition was rather an anatomical defect than physiological or pathological in nature. Mr. Jones believed that flexor metatarsi injury was sprain: the speaker did not say that it could not be, but most of these cases were nervous in origin, and due to derangement of the anterior tibial nerve.

Professor Macqueen had been very kind. He did not agree at all with the Professor's classification, however. He thought there was a definite condition of "jinked back," which he had described with all the alterations of the nerves and ligamentous structures, which was very distinct from shivering; in fact, they were two diseases.

He found that the general public used the phrase "kidney dropping" indiscriminately: he had always looked upon these cases as arising from injuries to the blood vessels, producing plugging of the iliacs, whereby the blood supply of the hind limbs was cut off. In his view this was an entirely different disease from shivering.

He mentioned in his paper that specific disease had an enhanced influence in an animal affected with shivering; also that he had seen a known shiverer with which at times no fault could be found. Shivering was a progressive disease: as time went on the condition inevitably became more pronounced; in fact, these cases were very unpleasant ones with which to deal.

Professor Macqueen described paralysis of the bladder as being due to fracture of the sacrum. Of course such a thing could happen, and direct injury to the nerve supply in that region or even further forward would probably affect the bladder; but the point he was trying to make was that in the case he recounted there was no direct injury.

He quite concurred with Professor McCunn's incrimination of influenza as a cause of shivering: many of these nervous diseases were due to some physiological functional derangement of the various nerves and nerve cells.

NORTHERN IRELAND MINISTER COMPLIMENTS VETERINARY STAFF

In moving the agricultural vote in the Northern Commons (Committee of Supply), Sir Edward Archdale, Minister of Agriculture, said that following the outbreaks of foot-and-mouth disease in the Downpatrick area last June the Ministry issued an Order requiring the mouth of every animal leaving Ireland to be examined by a veterinary surgeon before shipment. The net increase in the vote was more than accounted for by the requirements of that Order.

Sir Edward complimented the veterinary staff of his Ministry on the able manner in which the outbreak was handled.

"Similar outbreaks in Great Britain," he said, "have cost millions of pounds to suppress, and I attribute the fact that this serious outbreak, which might well have spread over the country, was put down at a total cost of £14,500, mainly to the very able manner in which our chief veterinary officer and his staff handled a most difficult and dangerous situation. I also acknowledge our great indebtedness to the police for the efficient manner in which they co-operated with us in this difficult task. But for the very able and tactful manner in which they controlled the movement of animals in this district it might well have been impossible to prevent the spread of the disease over the whole province.

"The sources of infection have always puzzled veterinary surgeons, and, perhaps, the most disturbing feature of the numerous outbreaks in Great Britain has been the failure to trace the probable source of infection. I am, therefore, particularly glad that we were able, after a most exhaustive enquiry, to trace the source of infection.

"It was found to be due to Dutch broccoli or cauliflower, imported through the port of Leith, the refuse from which was unfortunately thrown on a rubbish heap to which the cattle at the farm on which the first outbreak occurred had access. Holland is never free from foot-and-mouth disease."

"Whilst there was a certain amount of satisfaction to be derived from being in the position to present to the House reduced estimates for two years in succession," Sir Edward continued, "he would be failing in his duty if he did not point out that the services for which he was responsible could not be further curtailed without serious injury to their efficiency."

DENTAL ANÆSTHESIA IN THE DOG

J. T. EDWARDS, M.R.C.V.S.,
Addlestone

This surgical measure, which invoives regional anæsthesia of the infra-orbital and inferior alveolar nerves, is serviceable in a number of instances in canine practice, the indications for which are outlined below. For simplicity, the mesaticephalic (medium long-nosed) type of skull is dealt with in this paper.

Surgical Anatomy.—The sensory infra-orbital nerve, which occurs as a twin nerve cord arising from the maxillary nerve in the region of the deep face of the eye-ball, after supplying the last two molar teeth enters the capacious infra-orbital canal by its funnel-shaped entrance, supplies the fourth (carnassial) and third pre-molars and emerges on to the surface of the face by the infra-orbital foramen. While traversing the infra-orbital canal the nerve gives off a branch which supplies the remaining three pre-molars, the canine and the incisors. The branch for the latter runs in the maxilla and pre-maxilla.

The infra-orbital foramen is situated directly above the third pre-molar tooth, and, along with the emerging nerve cord, is readily palpable from inside the mouth, being covered only by mucous membrane. The nerve is palpable as a thick, flattened cord running forwards and upwards from the foramen (long axis of head horizontal). It divides, soon after emergence, into several branches which terminate in the upper lip and nostril.

The sensory inferior alveolar nerve arises from the mandibular nerve, another branch of the maxillary, and traverses the long mandibular canal in the substance of the lower jaw, supplying all the mandibular teeth. Below the first or second pre-molar tooth, the nerve emerges from the jaw by the mental foramen and terminates in the lower lip and chin. The mental foramen is less than half as large as the infra-orbital foramen, and is less easily found by palpation.

The emerging mental nerve is palpable either from inside the mouth just posterior to the strong attachment of the lower lip directly behind the canine tooth, or through the skin from outside, and the mental foramen is most easily felt by following the nerve into the bone.

Surgical Technique.—The infra-orbital nerve is easily blocked by injecting (with surgical asepsis—sterile syringe, needle and anæsthetic fluid; acriflavine, rivanol, etc., to the mucous membrane) any suitable local anæsthetic up the infra-orbital canal through the infra-orbital foramen. A dental syringe or a " record " syringe with a fine needle about one inch long and of an internal diameter of 0·5-1·0 mm. is used, the needle being inserted about half-a-centimetre along the ventral part of the canal, *i.e.*, below the nerve. It is desirable to make an insensible wheal under the oral mucous membrane first. The whole canal is easily injected and the resultant regional anæsthesia should suffice for the extraction of any tooth anterior to and including the carnassial (Pm 4). It is probable also that the first and second molar teeth may also be anæsthetised if a large quantity of anæsthetic fluid is injected, so that it overflows from the proximal extremity of the canal. Percain, owing to its lack of toxicity, is to be recommended in this connection. [The spheno-palatine and the anterior palantine nerves, other branches of the maxillary nerve, supply sensory fibres to the hard palate, and their area probably extends laterally to the inner (medial) gums, though probably not to the extent that this factor might adversely affect successful dental anæsthesia as considered here.]

As dogs vary very much in size and as the common local anæsthetics vary in strength, it does not seem very profitable to quote doses.

In addition to this method of injection, Frank, of America, uses and recommends the proximal method of approach to the nerve. He injects the local anæsthetic at the proximal extremity of the infra-orbital canal. As, however, this site is deep and difficult to approach with precision, and owing to the presence of large blood vessels in that region, there is some disadvantage in this way, and it is doubtful whether results can be obtained by it which are not also obtainable by the distal approach method.

The mental foramen can be reached either through the skin or through the mucous membrane. In the latter case a curved, fine-bore needle is recommended, except in very large dogs.

As it is doubtful whether the whole mandibular arcade can be regularly anæsthetised by injection through the mental foramen, an alternative method of approach is recommended by Frank. The object is to deposit anæsthetic fluid at the proximal extremity of the mandibular canal: this lies above the concavity in the lower border of the hinder end of the mandibular ramus. In the living animal this is felt on firm palpation with one finger tip along the free border of the lower jaw directly adjacent to the masseter muscle. The mylohyoid muscle is attached to the mandibular ramus just anterior to the site of the approach of the needle. For injection purposes a straight needle, about 1½ inches long and 1 mm. in diameter, is inserted close along the inner surface of the mandible at the level named above. The correct distance to penetrate is the same as one-half of the vertical height of the mandibular ramus measured at the level of the lower carnassial tooth. This can easily be felt and the correct distance to insert the needle easily calculated.

If the inferior alveolar nerve is blocked at its point of entry into the mandibular canal, all the teeth of the lower jaw, in addition to the lower lip and chin, can be anæsthetised.

Indications for Use: Infra-orbital nerve block —for any operation on the teeth or jaw (extractions, epulis operations, etc.).

Inferior alveolar nerve block—for similar tooth operations and for the treatment of fractures (wiring, etc.).

Professor Hinz, Director of the small animal clinic of Berlin Veterinary College, reports very favourably on dental anæsthesia by infra-orbital nerve block and states that for operations on the upper jaw and teeth it is advisable to inject the canals of both sides, as it appears that there exists some connection between the right and the left nerves.

Owing to lack of opportunity, I have been unable to map out the superficial areas of the face or to ascertain the extent of the deep tissues affected by regional anæsthesia of these nerves in dogs. Presumably, on anatomical grounds, the tissues are affected similarly as in the horse, with modification relative to the variation in form of the heads of canine breeds.

Work on this point is, however, being carried out in Professor Hinz's clinic at the present time.

Bibliography

Frank, E. R. "Dental Anæsthesia in the Dog." *Jl. Amer. Vet. Med. Assoc.* Vol. 73. pp. 232-3. (1928). Reprinted in *Vet. Med.* Vol., 26. pp. 462-3. (1931).

Hinz, W. Private Communication.

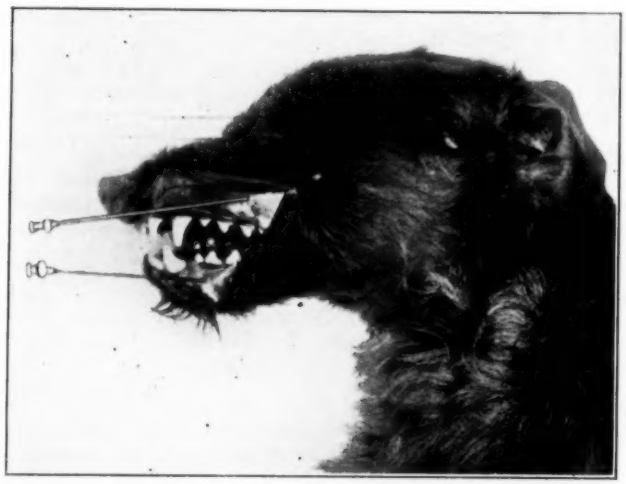


Fig 1.

Photograph showing stilettes inserted into the infra-orbital and mental foramina to show their position in the mouth.

Notwithstanding the bad weather the health of the animals in the Zoo was maintained at a high level throughout 1931, according to the annual report of the Zoological Society. There were 27 deaths from tuberculosis, the lowest figure recorded since 1925, and a number of notable successes were achieved in breeding and rearing certain animals and birds. Interesting figures are quoted in connection with the amount of food eaten during the year, the menu including 2,104 pints of shrimps, 447 pounds of dried flies, 228 goats, and 250,000 bananas.

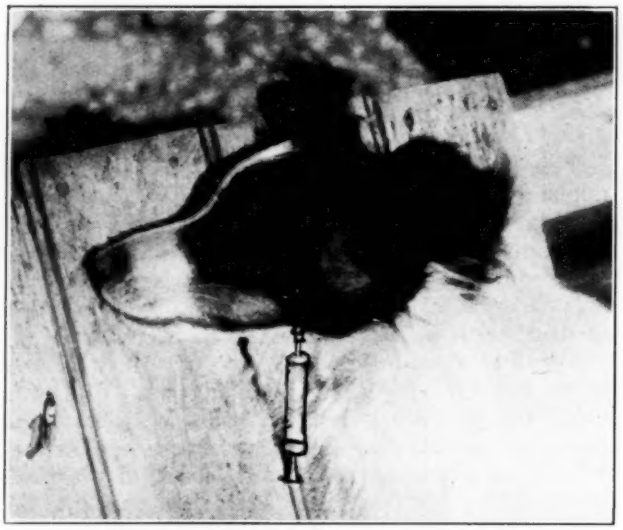


Fig 2.

Photograph showing the way of approach for making an injection around the mandibular foramen.

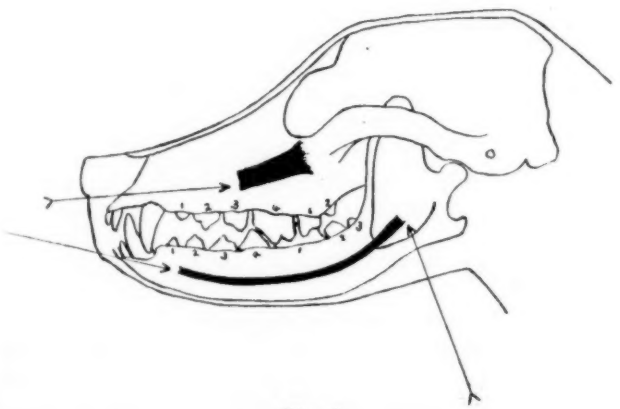


Fig 3.

Line drawing showing outline of head and skull. Premolar and molar teeth are numbered and the position and outline of the infra-orbital and mandibular canals are marked in black. The arrows indicate the line of approach to the infra-orbital, mental and mandibular foramina respectively.

DEER IN ENGLISH PARKS

Mr. G. T. Tyrwhitt-Drake, Secretary of the Deer Herd Book Society, stated to a Press representative recently that the maintenance of a herd of deer was becoming impossible for many people owing to high taxation. There are over 7,500 deer in the parks of Great Britain. The King is by far the largest deer owner in the country, and a recent deer census taken by the Deer Herd Book Society shows that in Windsor Great Park there are 819 animals. Another 150 are maintained on the Royal Estate at Sandringham. There are 46 registered herds in Great Britain. Probably the most ancient is the Ashton Court herd owned by Mrs. Smyth, at Long Ashton, in Somerset. The fallow deer there date from 1392.

The Veterinary Record
May 21st, 1932.

BOVINE MASTITIS AND THE PUBLIC HEALTH

WITH the exception of tuberculosis, probably no animal disease in this country is of such importance to both the medical and the veterinary professions as bovine mastitis, and the study of this condition, at least so far as it is liable to affect the public health, must bring the two professions into close touch.

For this reason we welcomed the publication in our last issue of a paper by Dr. Minett on "Bovine Streptococcus Mastitis and the Public Health," recently given in Leeds at a joint meeting of the Yorkshire Division of the National Veterinary Medical Association and the Yorkshire Branch of the Society of Medical Officers of Health. It is especially gratifying that Dr. Minett was able to give his address on this most important subject in Yorkshire, for no branch of the Society of Medical Officers of Health takes so much interest in veterinary matters, or indeed in the veterinary profession, as does the Yorkshire. This is shown by the fact that no fewer than eighteen veterinarians are associates of this Branch and have even formed a local Veterinary Group within it, whereas the official roll only shows the names of four members of the veterinary profession in all the other branches of the Society put together. A further mark of the value that the Yorkshire medical officers place upon a close association with our profession is evidenced by a veterinarian having been elected as an honorary member of their local Branch Council.

Dr. Minett gave a short and concise survey of mastitis in the cow and of the organisms which are responsible for the condition, and indicated a possible connection of certain types with outbreaks of disease in man. A point of some importance which was brought out was that while the common form of Streptococcic mastitis is harmless to man, organisms indistinguishable from those that cause disease in human beings are occasionally excreted from the udder. The desirability of totally prohibiting the whole of the milk from animals suffering from chronic mastitis in one quarter of the udder is debatable: doubtless there are many who will agree with Dr. Minett that there is no necessity to do so, provided "it appears to be wholesome." In England it is not compulsory to prohibit such milk from sale except under the Milk (Special Designations) Order where milk from cows with induration of the udder must not be included; in Germany milk from cows suffering from streptococcic mastitis is not considered to be prejudical to the health of man unless it contains pus, and in Holland milk from a cow suffering from inflammation of the udder may be used, except that from the inflamed quarter or quarters.

We would suggest that one of the difficulties associated with the study of milk-borne infections in man in the past has been the failure to take full advantage of the assistance which the veterinary research worker is able to afford. Dr. Minett makes a special point of this and intimates that he is willing to carry out immediate investigations on any herd on which rest reasonable suspicions. As Dr. Minett's paper was published simultaneously in this journal and in *Public Health*, the official journal of the Society of Medical Officers of Health, we sincerely hope that his offer will be accepted and borne in mind both by veterinarians and medical officers should a milk-borne epidemic unfortunately occur again.

The investigations which are now being carried out with such painstaking care at the Camden Town Research Institute by Dr. Minett and his colleagues are of value from the point of view of public health, but there is another aspect which merits attention. Each year, mastitis is responsible for considerable monetary losses to the agriculturalist. At present the general practitioner, who is called upon to treat this disease, sets out with the feeling that in spite of anything he can do, the affected quarter may be lost even if no more serious complications supervene. It is evident, therefore, that notwithstanding the facts which have already been brought to light, a considerable amount of investigational work is still required. A successful outcome can only be attained by the whole-hearted co-operation of all concerned.

MILK FOR HOSPITAL USE

Sir Merrik Burrell, reporting to the Council of the Royal Agricultural Society upon his attendance as a delegate to the conference on tuberculosis of the Royal Institute of Public Health, said the public were not sufficiently educated to the value of milk as a food, and this was to a great extent due to the medical profession.

It had been stated that the London hospitals had been asked repeatedly to buy a better class of milk for their patients, but only one of the leading hospitals had complied with the request. The one idea of most of the hospitals, Sir Merrik Burrell continued, was to buy the cheapest milk they could get. Sometimes it was surplus that had been hawked up and down the Metropolis and had been pasteurised several times and so had lost its food value.

INTERNATIONAL HORSE SHOW

Mr. Nigel Colman, m.p., on its Importance

Special efforts are being made to increase the attractiveness of the International Horse Show at Olympia to the general public. The show is to be held from June 16th to June 25th. A committee of well-known exhibitors and horse lovers have been assisting Lord Lonsdale and his co-directors, and, as a result of their co-operation, arrangements have been made to include in the programmes of each parades of packs of fox-hounds, with hunt servants in hunting pink. Another feature which will appeal to many will be the exhibition of past winners of the Grand National Steeplechase. Further spectacular items are under consideration.

At a luncheon given by Mr. and Mrs. Bertram W. Mills at Claridge's Hotel recently, Mr. Mills said that he had been requested by several men interested in horses to ask Lord Lonsdale and his co-directors of the International Horse Show if they could form a committee to assist the directors to carry on, and the result was that such a committee had been formed, and he hoped that, with the assistance thus afforded, this year's show would be a great success.

Mr. Nigel Colman, m.p., said that the International Horse Show was an outstanding event; it was undoubtedly the premier show on this side of the Atlantic. It was vital to the interests of horse-breeding, and for these reasons it must be maintained. It was of a strictly international character; it attracted foreign visitors and competitors from all over the world. It had also a distinct diplomatic value. At a time when the world was, so to speak, upside down, it was of paramount importance that nations should understand one another and have friendly relations with one another. Was there any better way of promoting these sentiments than by friendly rivalry in sporting events?

To understand the importance of the Horse Show they had to contrast it with the shows in other parts of the world. They found a different state of things prevailing in other countries compared with England. Here we enjoyed the extraordinary advantage of the best country in the world for hunting. Horse shows were well supported in Berlin, in the Dominions, and everywhere in the United States. In England everything had been done to promote the interest of shows, and as a result horses were catered for in classifications throughout the country. But the Horse Show at Olympia was one of the few shows that provided classes for horses only, and he agreed with Mr. Mills that if it went out of existence horse shows would be struck something more than a severe blow. On the trading side, prize horses at Olympia were enhanced in value and high prices were expected from the markets in other countries. There was no other show that could enhance the value of horses to the same extent as Olympia. The horse-breeding industry had a great export trade, and at the present time they ought to encourage any industry that had an export trade. Incidentally it was an integral part of the agricultural industry.

The Horse Show might have been dropped this year and held again next year. That might have been good business from the horse show point of view, but it would have been bad business from the point of view of the breeders. The Show was an entertainment in a sense; and they would not be serving the national interest by shutting down entertainments which gave employment and circulated money. The directors recognised that if the Show were to be held it must be a Show of outstanding merit, so that it would attract the public.

Clinical Communications

DISSECTION AS PART OF THE TREATMENT OF OLD AND LACERATED WOUNDS

J. SHARE-JONES, D.V.Sc., M.Sc., F.R.C.V.S.

Hon. Surgeon to the Veterinary Hospital, University of Liverpool

I have long been of the opinion that detailed dissection of the individual structures in an area during the process of healing in cases of old-standing lacerated wounds and old sprains would prove a very helpful factor in promoting healing and avoiding subsequent lameness. This is more strongly indicated in the case of a working animal such as a horse than it is even in the human subject, but I have been impressed by the manner in which it is overlooked in the practice of both human and veterinary surgery.

A horse would go lame should healing occur, for instance, with the skin of the fore-arm left too tense, or with adhesions between muscles, vessels, nerves, etc. The animal would remain unfit for work after the healing process was apparently completed, and I have indeed encountered cases where slaughter has been advised.

Recently at this hospital I have practised such dissection in a number of cases and the results have been so satisfactory that I am encouraged to publish a brief account of them. The following was a case that presented a typical example for the practice of this method of treatment.

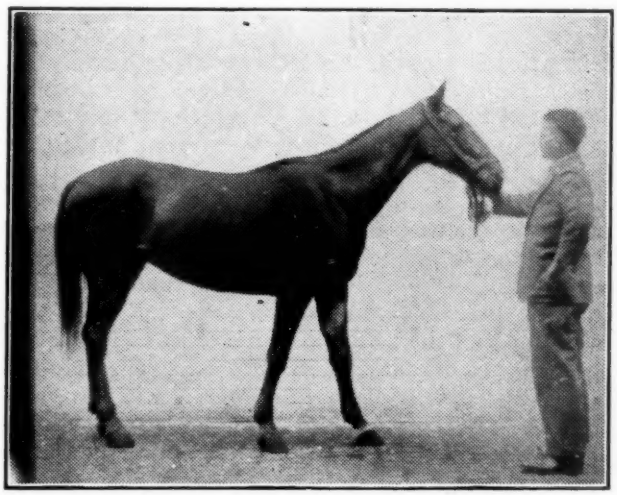
The animal was a well-bred, medium-sized, chestnut gelding, seven years old. He had an extensive laceration of the inner side of the near fore-arm, ten inches long and seven inches broad, which had been allowed to run on for many months until in the area there had developed irregular masses of granulation tissue which stood up above the level of the surrounding skin. The animal was obviously in great pain and much emaciated. He could not put the foot on the ground and he was unable to carry out flexion and extension; in fact, the limb was quite useless and he hopped. The border of the skin surrounding the area was smooth and rounded, polished and curved inwards. Growth in it had clearly ceased—nerves, vessels and muscles being irregularly interspersed throughout the area.

The animal was placed in the operating table and the wound treated by dissection under anæsthesia. At this first operation the anterior half of the wound was dealt with. The curled edge of skin was dissected free and uncurled and a small portion removed. The overgrowth

of granulation tissue was dissected away and the extensor muscles together with small nerves and vessels dissected out. This part of the wound was then covered with gauze which was introduced beneath the free dissected edge of the skin and kept in position by two loose sutures. After the operation the animal was returned to the slings.

The following week, on removing the animal from the slings it was noticed that the extensor muscles of the fore-arm were being used quite freely. A second operation was then performed on the posterior half of the wound, dealing with the flexor muscles, the animal again being returned to the slings after the operation.

The rate of recovery was remarkable and the animal was discharged and ridden from the hospital in five weeks after the second operation. From the plate it will be seen how freely the animal was using the limb. The flexor and extensor muscles were working quite smoothly and the length of the stride will be particularly noted, as also the manner in which the foot was placed flat on the ground.



I have similarly practised dissection on old-standing cases of sprained tendons with extensive adhesions. In my judgment, had the usual method of treatment by counter-irritation been solely adopted in these cases it would have had a detrimental effect and there would have been persistent lameness.

* * * * *

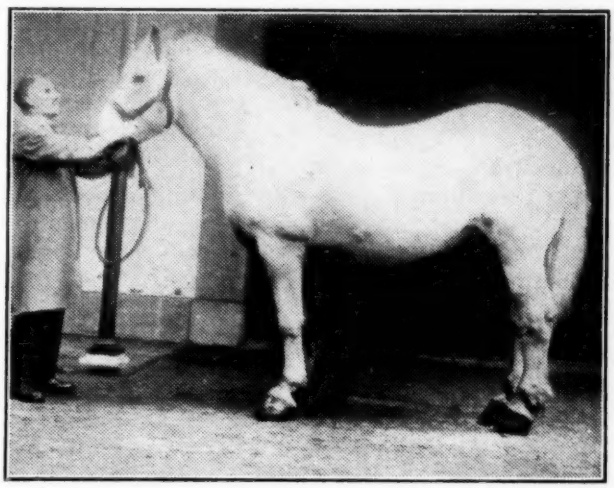
DOUBLE MEDIAN NEURECTOMY FOR BILATERAL PYRAMIDAL DISEASE

J. SHARE-JONES

The subject was a grey cart mare, of fine quality but aged. She had been in hard work all her life, drawing a coal-dealer's lorry, but had developed pyramidal disease in both fore feet and had been condemned. Cinematograph pictures of the mare in action showed the pronounced degree of lameness.

I performed median neurectomy on both limbs under a general anæsthetic and the animal made a quick recovery. Three weeks later she was going quite sound on both fore limbs and she was later put to work.

The plate illustrates the mare some time after the operation. Compare the coronet of the fore limb with those of the hind limbs, and note how squarely the near fore foot rests on the ground.



* * * * *

LOCAL ANÆSTHESIA FOR MEDIAN NEURECTOMY: INTERESTING PHENOMENA

J. SHARE-JONES

Owing to the inconvenience experienced in dealing with cases after general anæsthesia when performing neurectomies in the operating table, I was prompted to use local anæsthesia, and have found it very effective when dealing with both fore and hind limbs.

Three successive cases of median neurectomy have been unusually interesting.

They were placed in the operating table and secured in the ordinary way. The seat selected was the one I first recommended in 1906 and which I have since invariably adopted. At this seat the nerve is exposed as it curves around the inner edge of the radius. The first incision is made slightly behind what is felt as the edge of the bone. About half to one inch of the lower border of the superficial pectoral muscle is included and the incision is extended downwards for a further inch or so. At this seat the disadvantages of the original high seat and the later seat, clear of the pectoral muscle, are avoided.

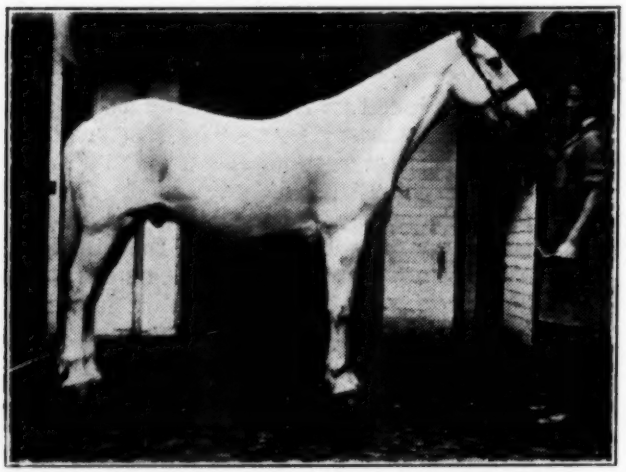
The anæsthetic was injected subcutaneously. On separating the lips of the incision thus made

the tense shiny layer of deep fascia is seen. The knife is now taken between the thumb and fore-finger with about a quarter-of-an-inch of the end of the blade exposed and plunged through the fascia. Through the opening thus made another injection was made to anæsthetise the deeper structures. Immediately beneath the deep fascia are the nerve, the posterior radial artery and a number of veins. The relationship of these structures here is very inconstant and any two might be found enclosed in a capsule. As a necessary precaution the director is used to slit the deep fascia. The nerve is then exposed on the tenaculum and a portion excised. The wound is closed in the usual way and the animal released from the table.

During the operation the degree of anæsthesia induced was very satisfactory.

On the following day the amount of swelling at and around the seat of operation gave cause for some alarm, but there was no systemic disturbance and the animal fed well. Next day there was a marked diminution in the size of the swelling and on the third day it had completely subsided. But what was most striking was the fact that there was no exudate from the wound other than a slight serous discharge. There was no sign of sepsis. The wound healed with extraordinary rapidity. In two cases recovery was complete in ten days and in the third in eight days.

It is possible that the explanation of the phenomena exhibited is that the superficial and deep injections of the anæsthetic produced venous congestion in the area with the beneficial effect on the progress of healing of the wound comparable with that which is the objective when Bier's well-known method of artificial compression as a therapeutic measure is adopted.



The operation in this case was performed on the off fore limb and recovery was complete in eight days.

Abstracts

[Contribution to the Local Anæsthesia of the Forelimb of the Horse below the Carpal Joint. Bolz, W. *B. T. W.* Vol. 44. pp. 769-773.

Experiments for the Determination of the Areas of Anæsthesia after Local Injections of the Nerves of the Foot in the Horse. Bolz, W., and Grebe, W. *T. R.* Vol. 38. pp. 101-103 and 119-121. (With a good bibliography on regional anæsthesia in the domestic animals.)]

The accompanying line drawings present a clear idea of the conclusions arrived at in these articles. A few technical notes are also desirable, as follows:—

Bolz recommends that for regional anæsthesia of the median nerve, the injection be made about a hand's breadth above the chestnut into the limb, which has just been drawn out forwards with the foot resting on a convenient support. The nerve is approached from between the radial and ulnar flexor muscles, *i.e.*, obliquely from behind forwards.

[In view of the verbose description required to set out each step in the technique of the various injections dealt with in these articles, it is instead suggested that a preliminary injection and dissection be made on a cadaver by anyone intending to practise them.]

The sites of injection are indicated by spots or circles in the figures. In each case 10 c.c. of a 3 or 6 per cent. novocain were injected around the nerve. It is assumed that the injection of the ulnar nerve is made at about the lower part of the posterior surface of the forearm. In each case the anæsthetised areas were mapped out by the pin prick method and it was assumed that the contents of the hoof are rendered insensible when the corresponding cutaneous area extends completely round the coronet.

It is interesting to note that only by simultaneous nerve block of the median, ulnar and musculo-cutaneous (cutaneous branch) [N. cutaneus antibrachii lateralis, Bradley] nerves, is the entire *manus* (limb from carpus downwards) anæsthetisable.

It will be observed that in the Hannover method (illustrated) there is a high medial and a low lateral volar injection and the outline of the anæsthetised area follows posteriorly the position of the communicating branch between medial and lateral volar nerves.

The innervation of the fore and hind limbs is not alike, inasmuch as high or low plantar anæsthesia does not always produce the effect shown in the diagram, as is regular in the case of the fore limbs. In most of the experimental cases injections of novocain at the position of high plantar neurectomy only resulted in a small area of anæsthesia around the site of injection.

The skin and deeper tissues on the anterior aspect of the hind fetlock and pastern are innervated by terminal branches of the deep peroneal nerve, and cases of lameness due to ringbone, which have persisted after high plantar neurectomy, are described.

J. T. E.

DIAGRAMS SHOWING AREAS OF ANÆSTHESIA OBTAINED BY VARIOUS TYPES OF NERVE BLOCK. THE WHITE SPOTS REPRESENT INJECTION SITES.

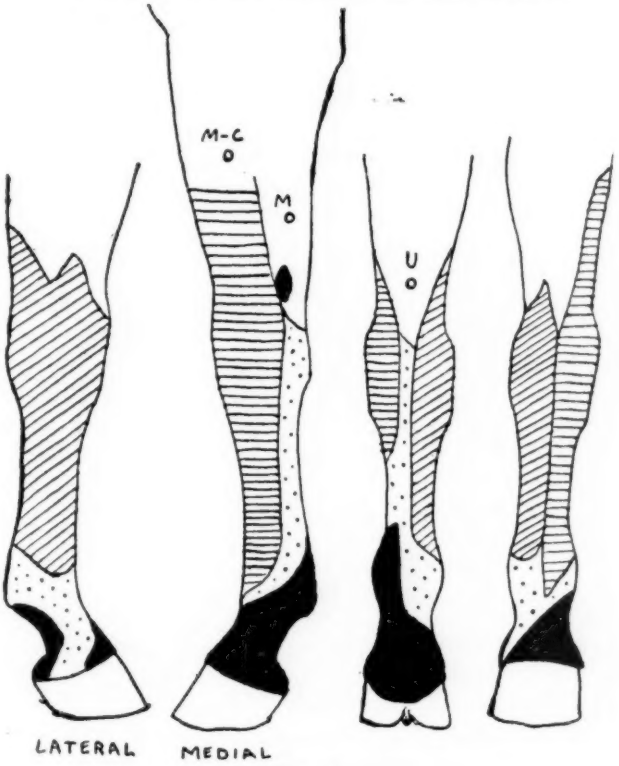


Fig. 1.

Diagram showing areas anæsthetised by nerve block of the median (black), ulnar (oblique line) and musc. cutan. (horizontal line) nerves. The additional spotted area is affected when these three nerves are blocked simultaneously. The small circles indicate the sites of approach for the hypodermic needle.

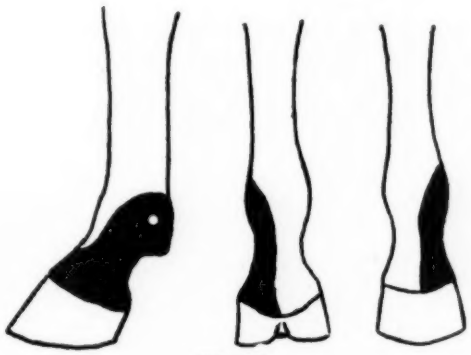


Fig. 2.
Low volar and low plantar (unilateral).

Fig. 3.
Low volar and low plantar (bilateral).

Fig. 4.
High volar (bilateral).

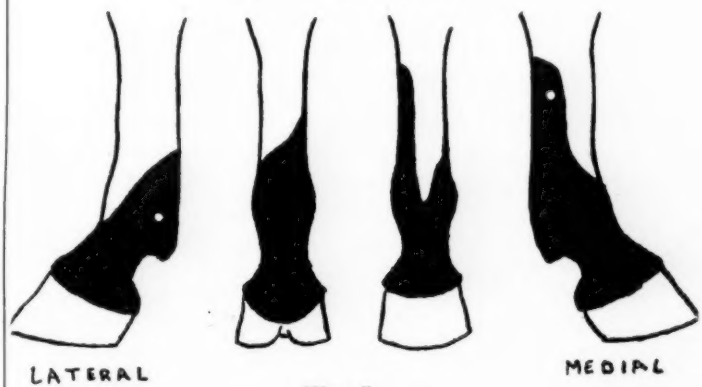


Fig. 5.
Hannover method.

* * * * *

[*B. WELCHII* **Infections in Animals and Man.** Disc. Sect. Comp. Med., Roy. Soc. Med., *Proceedings*, Vol. xxv, No. 6. April, 1932. pp. 807-817.]

The *B. welchii* organisms form a group of extremely wide distribution, and this report of the proceedings of the January meeting of the Comparative Section of the Royal Society of Medicine is of particular interest to the veterinarian in view of the fact that in animals it appears that there are specific diseases which are attributable to this group, while in man it only takes part in human disease as a complication of some injury or other illness. For instance, Dr. B. W. Williams believes *B. welchii* to be responsible for an important part of the toxæmia associated with acute

intestinal obstruction, a claim which is consistent with the observation that organisms of the group are normal inhabitants of the alimentary tract of man and most animals.

It would seem that no organism presents a wider range of pathogenicity, which is so slight in some of the forms in which it is presented that, according to Miss Muriel Robertson, no milk sample under ordinary open conditions is free from it, and in America one of the salts commonly used in some districts to make bread rise was found to do this by the gas-producing property of *B. welchii*, while on the other hand, the pathogenicity can be so terrible that a man may die in eight hours from a fulminating gas gangrene set up by this organism in a wound which in itself is neither extensive nor serious.

The veterinary practitioner in the field, faced with the effects of the activities of micro-organisms of the gas-gangrene group in the production of disease in animals, will agree with the opinion reflected in the remarks of members of both branches of the profession, that the eccentric behaviour of the bacillus of Welch, under different circumstances, provides one of the greatest mysteries of bacteriology requiring elucidation at the present time.

A striking instance of the ubiquitous nature of this group of organisms was given by Mr. T. Dalling, in opening, when he referred to experiences of the contamination with *B. welchii* of antigens, etc., prepared for horses and dogs, the injection of which produced the typical gas gangrene syndrome, sometimes ending fatally. Despite the occasional isolation of the organism from the lesions of diseases of cattle or sheep of the blackleg type, or of the braxy-like disease of sheep, however, it would appear that true *B. welchii* plays little or no part in their causation. Infection from the alimentary canal does not seem to occur unless the intestine is already diseased, but, Dalling states, it is reasonable to believe that if *B. welchii* be present in a diseased intestine in which conditions are suitable for the elaboration of its toxin, a true *B. welchii* toxæmia may result. The speaker proceeded to detail work, based on a comparison of the L. D. Bacillus, *B. paludis* and Bennett's anærobe with *B. welchii*, from which he concludes that, though typical *B. welchii* may be isolated from sheep under normal and diseased conditions, it is probable that the *B. welchii*-like organism causing specific diseases in sheep varies somewhat from typical *B. welchii*. The suggestion is ventured that the group of organisms referred to as *B. welchii* contains several antigenically and culturally different types, though Dalling can offer no explanation of the antigenic differences.

Braxy and lamb dysentery were cited by Mr. A. D. MacEwen as examples of alimentary infection with anærobic bacteria, in which occurred cases of invasion of the wall of the stomach or intestine before death: no satisfactory theory had been advanced to account for the bacteria acquiring the capacity to invade the wall of the alimentary tract. It was possible that bacteria in the intestine only produced a sufficiency of toxin to cause disease under exceptional conditions, chief among these conditions being the presence of suitable food material in the intestine for bacterial growth and toxin production, and it might be that an alimentary disturbance was also necessary to provide conditions where toxin as it was produced was not destroyed by the digestive processes.

Statements to the effect that *B. welchii* causes gas-gangrene in domestic animals could only be accepted when corroborative evidence ruled out *post-mortem* invasion, and when the bacteriological data were sufficient to justify the recognition of the bacterial species. There were but few recorded cases fulfilling these requirements.

W. B.

* * * * *

[The Cause of Caseous Lymphadenitis of Sheep in Australia. Carne, H. R., and Cramp, R. C. *Aust. Vet. Jour.*, viii, 1. March, 1932.]

This contribution to the study of the etiology of the lesions of caseous lymphadenitis is worthy of perusal in the original by those of our readers responsible for the examination of imported mutton and for whom the subject thus has a particular interest. A review of the bacteriological literature is given, from a perusal of which the authors find that at least five different bacteria have been found associated with lesions of caseous lymphadenitis and pneumonia in sheep. These comprise: (1) *Corynebacterium ovis* (bacillus of Preisz-Guinard, bacillus of Preisz-Nocard, *Bacillus pseudo-tuberculosis ovis*), (2) *Bacillus pyogenes*; (3) Staphylococci; (4) *Bacterium purifaciens*, and (5) Diplococci.

Evidence is quoted to show that caseous lesions in the lymphatic glands or lungs caused by different bacteria may present very similar macroscopic appearances.

Bacteriological examination of 62 lesions of caseous lymphadenitis in Australian sheep resulted in *Corynebacterium ovis* (bacillus of Preisz-Nocard) being demonstrated in purity in 60 instances, whilst two lesions were sterile.

It is concluded that caseous lymphadenitis of sheep in Australia is caused by pure infections with *Corynebacterium ovis*. Other bacteria which have been described as the cause of this disease occur but rarely, if at all, in Australian sheep.

W. B.

* * * * *

[Intestinal Emphysema in the Colon of a Calf. Eilmann. *D.T.W.* No. 1. January 2nd, 1932. 3.]

Intestinal emphysematous changes (pneumatosis) are frequently met with in swine, but this condition is regarded as uncommon in cattle.

The author examined a portion of the colon of a calf which was considerably thickened and intensely inflamed. It was covered with a greyish-red catarrhal exudate, while the tissue of the intestinal wall was infiltrated and ballooned with small gas bubbles. The lesion did not appear to have interfered with the animal's nutrition, and the carcass was passed for food. Histologically the lesion proved to be an inflammatory emphysema particularly of the submucosa and also of the muscularis mucosa, and differed from swine in that the process had not extended to the lymphatic vessels. The *Bacillus amylobacter* was isolated from the diseased tissue, but on account of the ubiquitous presence of this micro-organism it is doubtful whether it could be regarded as the cause.

W. L. S.

* * * * *

[The Biological Diagnosis of Pregnancy in the Mare. (Zondek). Becker. *D.T.W.* No. 1. January 2nd, 1932. 7.]

The author refers to Zondek's original method for diagnosing pregnancy in mares, which is based upon the demonstration, by the use of young rats, of certain hormones expelled from the body in the urine. Zondek's findings as to the usefulness of this method have been confirmed by a large number of tests, but the point arises as to how soon after conception an accurate diagnosis is possible and how long do the hormones persist. Schoper has recently reported that his earliest positive result occurred on the fifty-ninth day after service, and two days after foaling the result was negative. On the other hand, the author obtained positive results 49 days after service.

When mice were substituted for rats as test animals the alleged toxic action of equine urine for mice was not observed when the urine was filtered, acidified and diluted with physiological saline prior to injection. It was found that an earlier diagnosis was possible in mice than in rats, probably on account of the fact that the smaller animals received a relatively larger amount of the test urine. Like Kust, the author states that a positive result can be obtained in this way six weeks after service.

The possibility of using blood serum, which is much easier to obtain than urine, as test material is discussed. Using a 3 per cent. glucose solution as activator for anterior lobe hormones as recommended by Zondek, the writer injected a series of mice with mare's blood serum and demonstrated a positive result 99 days after conception. The result in a control mare was completely negative. Experiments in progress are designed to show whether or not this method will produce a satisfactory degree of certainty in the diagnosis of pregnancy.

W. L. S.

[Report of First European Conference of Experts in Poultry Diseases. Miessner, te Hennepe, Berge and Schütt. *D.T.W.* No. 3. January 16th, 1932. 34.]

The First European Conference of Experts in Poultry Diseases was held at the Veterinary High School, Hanover, in October of last year, and was attended by 26 veterinarians including representatives from Britain, Holland and Turkey. The proceedings were devoted entirely to pullorum infection in hens and a searching programme of work was drawn up to investigate the most suitable technique for the detection of *S. pullorum* carrier hens. To this end the serum slow agglutination test was compared with the fresh blood rapid method, and the results were checked by *post-mortem* examinations. The preparation of antigens also received attention by the conference, and the following is a summary of the conclusions arrived at:

(1) The 60 birds which were examined by serological and cultural methods served to emphasise the fact that the agglutination test is indispensible for the control of pullorum infection in poultry.

(2) In both the serum slow and fresh blood rapid agglutination methods similarly good results were obtained. The slow method showed agreement with *post-mortem* findings in 95 per cent. of cases, while the rapid method agreement was reached in 96·6 per cent. of cases.

(3) In the serum slow method a titre of 1 : 50 is to be regarded as positive, and the result is read macroscopically.

(4) For the more accurate reading of the results of the fresh blood method it is recommended that 3 c.cm. of a 1 per cent. solution of crystal violet should be added to 100 c.cm. of antigen.

(5) It is recommended that a nephlometer should be prepared in order to ensure a standard antigen of suitable opacity. The antigen should be prepared as follows: A well-grown agar culture of *S. pullorum* should be washed off with a 4 per cent. sodium chloride solution, and for the slow method this may be diluted ten times.

(6) It would be useful to conduct comparative agglutination tests using unheated and dead antigens, and the effect of adding carbolic acid, formalin and yatren to the antigen should be further examined.

(7) The application of the fresh blood rapid agglutination test necessitates a special technique, and should be employed only by veterinarians who have been specially instructed in its use.

(8) Antigens should be furnished only to these trained veterinarians, and it is inadvisable to allow the method to be used by laymen.

W. L. S.

N.V.M.A. Divisional Reports

CENTRAL VETERINARY SOCIETY

AN EQUINE EVENING

Every aspect of veterinary work is well represented in the membership of this important Division of the "National," and none are more regular in their attendance than those with whom horse practice is the predominant interest; consequently, it was a matter for surprise and regret that these were not accorded similar support on one of the now comparatively rare occasions devoted to the consideration of an equine subject. Nevertheless, those who did attend passed a thoroughly enjoyable evening in the discussion of Mr. Walter Perryman's paper "Some Nervous Diseases affecting the Hind Quarters of the Horse," which is reproduced, together with a report of the discussion, at the commencement of this issue of the *Record*.

The Chair was occupied by the President, Major Hamilton Kirk, and there was also present Captain L. S. Balls, Mr. W. Brown, Major W. Denington, Messrs. R. Eaglesham, H. D. Jones, H. C. P. King, H. S. King, Professor Jas. Macqueen, Dr. J. McCunn, Mr. J. W. McIntosh, Mr. H. G. McShane, Mr. W. Perryman, Major R. H. Stalker, Veterinary-Colonel G. Rees-Mogg, and Captain J. F. Macdonald, Hon. Secretary, together with Dr. H. Fox and Dr. T. Vacek as visitors.

In the course of the evening the President extended a cordial welcome both to Dr. Fox, a graduate of Russia, who also holds the English diploma, and to Professor Vacek, Director of the Physiological Department at the Veterinary University College, Brno, Czechoslovakia: a compliment of which both guests made suitable acknowledgment.

The minutes of the last two meetings of the Division, which had been published in the *Record*, were taken as read and were confirmed and signed.

CORRESPONDENCE

(1) From Mr. H. E. Bywater and Mr. G. P. Male, apologising for their absence.

(2) From Mr. A. R. Smythe, of Falmouth, stating that when he left London it was his hope that he would be able to make occasional attendances at meetings of the Society, but to his great regret he found this to be impossible, and he therefore wished to submit his resignation.

(3) From Mr. D. E. Wilkinson, of Chigwell, enclosing a contribution to the Society's Collecting box for the Victoria Veterinary Benevolent Fund, as he had been unable to attend the meetings regularly. The Hon. Secretary informed the meeting that he had written thanking Mr. Wilkinson.

(4) From Miss Roots, of Brighton, thanking the Society for its expression of sympathy with her in the death of her father and for the wreath that had been sent.

(5) From Major Slocock, of Hounslow, in similar terms, with reference to the passing of Mr. Sydney Howard Slocock.

(6) From the Secretary of the National Horse Association, covering their Reference Book for the year 1932—which, commented the Secretary, was a most informative publication. This Horse Owners' Reference Book could be obtained for one shilling from the National Horse Association, 12, Hanover Square, W., or from Mr. Perryman. The National Horse Association had also forwarded a copy of the report of their Council to the Annual General Meeting of members—a document which detailed a good deal of the very valuable work that the Association was carrying on in the interests of the horse and of horse-owners: parliamentary work, and so forth.

The Secretary added that the N.H.A. seemed to be a really live body. They had been taking up such questions as the transport restrictions in Oxford Street, with regard to horse traffic, the London Passenger Transport Bill, led horses and the Highway Code, and the Light Horse Breeding Grant. It was apparent that this body was well to the fore when anything connected with the horse cropped up.

This concluded the presentation of correspondence, and the President commented that it was a great pity that Mr. A. R. Smythe had found it necessary to resign from Fellowship. Mr. Smythe's resignation was accepted with regret, on the proposition of Mr. Jones, seconded by Professor Macqueen.

The President observed amid applause, that, as regarded Mr. Wilkinson's kindly action, he hoped that other members would follow his example.

Obituary.—Continuing, the President observed that, before they proceeded to the other business before them, it was his sad duty to acquaint them with the great loss that had been sustained by not only their Society but the whole profession in the death of two distinguished members. Mr. Sydney Slocock passed away on March 16th, having spent 50 of the active years of his life in the pursuit of his calling. During that time he endeared himself to everybody whom he met and he occupied nearly all the honourable appointments which his colleagues could have conferred upon him. Mr. Slocock was unstinting in his devoted service to the veterinary profession, which culminated, as regarded his appointments, in his occupancy in 1924, of the Presidential Chair of the Royal College of Veterinary Surgeons.

The other distinguished gentleman whose loss they mourned was Mr. William Roots, of Brighton, who was one of the earliest Fellows of that Society, and whose long span of life approached 80 years. They would both be very much missed. Mr. Roots' funeral was attended, on behalf of the Society, by Captain Pritchard,

of Brighton, while they were represented at the interment of Mr. Slocock by Major Howard Slocock, Mr. McIntosh, Mr. Willett, of Staines, and Captain Sidney Villar. The Society's thanks were due to those gentlemen.

MORBID SPECIMENS

The President informed the meeting that Mr. Perryman had brought some specimens in connection with his paper, and invited him to show them at that stage, in order that the presentation of his paper might not be interfered with by examination of the specimens.

Mr. Perryman said that the specimens he had to show were of great interest to him, and he hoped they would also interest the meeting. He had dealt with most of them in his paper, and perhaps they would be able to discuss them better after he had read it. The first one dealt with obturator paralysis, and the case was unusual in that it was the only one which he was enabled to watch from the onset of the trouble until the death of the animal.

The next specimen he had mentioned in his paper. It was from an animal, belonging to one of his firms, which exhibited a very one-sided aspect in consequence of pelvic injury; nevertheless, it was a most capable horse and worked in that condition for seven or eight years. In his case, although there was a good deal of callus formation there, the horse did not show the characteristic rotation of the leg so indicative of obturator trouble. Fifteen months later, when the animal had been sold out of the firm, he (Mr. Perryman) was sent for and recognised the identical horse—it had been thrown over and had broken off the point of the hip. He advised slaughter, and got the bones.

He had some photographs to show them, which had been taken years ago—he dealt with these under the heading of flexor metatarsi and extensor pedis trouble: they would see that the horse's limb could be lifted with the greatest facility. In this particular case he lost sight of the horse.

His next exhibit comprised the bones of a horse that had paralysis of the bladder, rectum and tail: they would see the bony growth and would hear later what he had to say about it. Following this came a specimen which was not dealt with in his paper, illustrative of a real broken back, which doubtless some of them would like to see.

Then came a specimen of which he would speak under the heading of "jinked back": they would see plenty of trouble there. The next was an injured back; in this particular case the knackerman sent him the bones as they appeared there—chopped off, but they would see, by the callus, that there had been an injury.

He mentioned in his paper about shivering. That was a most interesting case, but when he went to sort out the bones he had to show them, he could not find those relative to it.

Major R. H. Stalker exhibited some photographs of a horse with tuberculosis. That mare was admitted to the hospital at Woolwich on February 1st. She had been in the Army for two years, during the whole of which time she had been a bad doer, being treated with oil of chenopodium on three occasions. During the first month the mare picked up, but then she began to show a certain stiffness in the neck. He tested her with tuberculin (subcutaneous method), and they would see the lump that came up after ten days—it was ostitis of the fourth cervical vertebra.

The mare was destroyed, and on *post-mortem* the lesions found were that ostitis, four encapsuled tumours in the spleen, anything from 4-6 inches long and about 2 inches deep. No other lesions were found. During the time this mare was in hospital (five weeks) she actually put on weight. When she came in she weighed 9 cwt.: at the end of 28 days she weighed 10 cwt.—a great weight for a mare in that condition. The ostitis manifested itself in ten days; before that there was no sign of tuberculosis in the mare at all.

Nomination as Fellows.—The President observed that before they proceeded to the election of new Fellows, it was very gratifying to note that they had the nominations of three others: Miss Beatrice Locke, of Brookwood, Mr. S. J. Edwards, of the Royal Veterinary College, and Mr. C. S. Randle, of the Ministry of Agriculture.

Elections.—The following gentlemen were unanimously elected: Mr. P. J. Cautley, Finchley Road, N.W.3 (Proposer, Professor J. McCunn; Seconder, Professor G. H. Wooldridge), and Mr. S. L. Hignett, Royal Veterinary College, N.W.1 (Proposer, Professor J. McCunn, Seconder, Mr. C. Formston).

Paper.—The President said that Mr. Perryman had very kindly consented to read a paper to them that evening, and he knew that those who were present would be very anxious to hear it—apparently the canine gentlemen had stopped away. He would call upon Mr. Perryman to read his paper.

At the termination of the essayist's reply to the excellent discussion evoked by his informative paper, Mr. McIntosh said that he was sure the meeting would wish him to convey to Mr. Perryman the gratitude of the Society for his very excellent contribution. Mr. Perryman had undoubtedly devoted a great deal of time and thought to the preparation of his paper, and, by the exhibition of his specimens, had afforded them practical proof of the force of the arguments he had been good enough to bring before them. They were most indebted to him for coming there and giving them that most excellent paper.

Next Meeting.—The Hon. Secretary drew attention to the fact that at next month's meeting of the Society they were again to have a paper on an equine subject. It was most disheartening to

those who were good enough to prepare and present papers to have so small an attendance, and as Major Hicks was coming all the way from Lincolnshire to give a paper he did hope that there would be a far larger muster of members.

The Chairman supported the Hon. Secretary's observations, but commented on the excellence of the discussion they had had that evening.

The meeting concluded with the passing of a vote of thanks to the President for his conduct in the Chair.

J. F. Macdonald, *Hon. Secretary.*

* * * * *

LANCASHIRE DIVISION *

ANNUAL GENERAL MEETING AT MANCHESTER

Mr. J. Spruell's Presidential Address

The Annual General Meeting of the Lancashire Division, N.V.M.A. was held at the Grand Hotel, Aytoun Street, Manchester, on Wednesday, March 23rd, 1932, at 2.30 p.m.

Mr. John Spruell, M.R.C.V.S., D.V.S.M. (Vict.), was formally installed in the chair by the retiring President, Mr. J. O. Powley, who expressed the wish that Mr. Spruell would have a successful year, and receive the same support that he had received from the members of the Division. Mr. Spruell, he was sure, would prove an able President and do for the Lancashire Veterinary Medical Association what the other past Presidents had done.

Mr. Curbishley proposed a vote of thanks to the retiring President, Mr. Powley, for his able conduct of the business of the Division during the past year. Mr. Holroyd seconded and the proposition was carried unanimously.

Mr. Powley, in reply, expressed his thanks, and said that, although he had vacated the chair, he was still a member of the Division and, as such, hoped to be able to give much assistance in the future.

The members present were Messrs. J. Spruell, A. L. Mullen, A. W. Noel Pillers, W. Woods, A. J. Wright, J. W. Brittlebank, J. O. Powley, J. Holroyd, E. H. Curbishley, J. H. White, Warwick Fowle, G. Mayall, R. C. Locke, G. H. Locke, F. Hopkin, C. F. Shawcross, and A. Alexander. Visitors—Messrs. J. McGee and W. Leslie Dwerryhouse.

Apologies for unavoidable absence were received from Messrs. H. O. Davies, H. A. Turner, P. Manuel, S. H. Gaiger, H. T. Matthews, R. Hughes, W. Tweed, C. T. Trevers, T. G. Millington, and H. Holroyd.

The minutes of the previous meeting, having been published in the *Veterinary Record,* were taken as read.

Election of Council of the R.C.V.S.—A letter was read from the Secretary of the North of England Division asking for the support of their candidate, Mr. T. M. Mitchell, for election to the Council of the Royal College of Veterinary Surgeons.

It was reported that it had already been decided to issue a circular to members of the profession in connection with the Council election, and that the Yorkshire Veterinary Medical Association had been invited again to combine with the "Lancashire" in the issue of such circular. Colonel Brittlebank proposed that the Yorkshire Veterinary Medical Association be reminded of the old association which existed between the two Societies and the hope expressed that it be continued, and that the North of England Veterinary Medical Association will support their candidate in return for the support of their candidates.

Mr. Holroyd seconded, and the resolution was carried unanimously.

Hon. Treasurer's Report.—The Hon. Treasurer, Mr. Noel Pillers, submitted the balance sheet for the year ending December 31st, 1931, copy of which had been sent to each member of the Division. Mr. Woods proposed, Mr. Powley seconded, and it was unanimously resolved, that the Financial Statement be adopted.

Summer Meeting.—The Secretary read a letter which he had received from the Liverpool University, in which an invitation was given for the Division to hold the Summer Meeting at the Hospital, and an offer made to provide the programme. Mr. Curbishley proposed that the matter be referred to the next meeting of the Council for further consideration. Mr. Holroyd seconded, and the proposition was carried.

President's Address

The incoming President, Mr. John Spruell, now delivered his Address from the Chair as follows:

According to the Rules of this Association, the President is required to deliver an inaugural address at the Annual Meeting.

In the first place, I should like to say how much I appreciate the great honour you have conferred on me in asking me to occupy this Chair for the ensuing year. I may say that I was very reluctant to allow my name to go forward because, being no orator, I did not feel I was qualified for the position. However, after careful consideration, I decided that it was my duty to do all I could to further the aims and objects of this Association. I therefore thank you for the confidence you have shown in placing me in the Chair, and will do my utmost to uphold the traditions of the position. When I think of the many eminent veterinarians who have occupied this Chair before me, I feel the great responsibility you have placed on me. Therefore I appeal to all the members, particularly to the younger ones, to take a greater share in the activities of our Association. A more regular attendance at meetings, an increased willingness to give papers and to furnish clinical cases and pathological specimens, would result in a lighten-

* Received for publication April 29th.

ing of the burden of the office-bearers, and in adding enormously to the value of our meetings. What might at first seem a little extra trouble will, I am sure, in the long run prove to be of the greatest benefit to all concerned.

At a recent meeting, Dr. Bullock is reported to have said that an Association is one of the most important means of advancing veterinary science. We are aware that the work of the schools generally finishes as soon as the student obtains his Diploma, but he must obtain his experience after he leaves college, and the best part of this always has been gained at meetings with his brother practitioners, and from the resulting pooling of individual experience.

Local Associations have done much to advance veterinary science. and have given great impetus to the veterinary profession. If this is true of the local Associations, how much more true should it be of the National Veterinary Medical Association. I would therefore recommend this aspect of the subject to the serious consideration of those who are not already members of that latter body.

An immense amount of work has been done by the Council of the National Veterinary Medical Association on behalf of ordinary members, and it is only through such an organised body that the voice of the profession can influence public bodies and Government Departments. In particular, I take this opportunity of bringing to your notice that the Jubilee Congress of the National Veterinary Medical Association is to be held at Folkestone in August. This event is even more interesting to us as one of our members, Mr. Wilson of Nantwich, has been honoured—and I am sure you will all agree that it is a fully-deserved honour—by being asked to open the discussion on the paper "Clinical Examination of the Cow's Udder" to be read by Captain Simpson.

This afternoon we have had an Annual Meeting of a very useful body, *viz.*, The National Veterinary Benevolent and Mutual Defence Society. This, in my opinion, is a Society which all veterinary surgeons should join as soon as they obtain their Diplomas. The Preamble to the Rules fully explains the reasons for its creation, and a little thinking will soon convince any veterinarian why he should be enrolled amongst its members. I understand it was founded by Lancashire practitioners, but all members of the Royal College of Veterinary Surgeons are eligible for membership. It has brought relief to many practitioners when they were most in need of a friend to guide them through a difficult and worrying time. It has also a section which helps to look after those members of the profession, their widows or dependants who, after proper enquiry, may prove to be deserving of benevolence. To me it has always been a mystery why so few veterinary surgeons, especially general practitioners, are members of this useful and necessary Society. If there should be anyone who desires to know more about this, I have no doubt that the Hon. Secretary will be delighted to supply him with the necessary literature.

There is another Society, *viz.*, The Victoria Veterinary Benevolent, which desires all veterinary surgeons to become subscribers as it performs a very necessary function for those who are unable to help themselves. Lest any question should arise as to the wisdom of supporting two Societies with almost identical aims, I can confidently assure you that these two bodies do not overlap in the least, but work together in the closest partnership and harmony.

The organisation of veterinary surgeons, which is shown by the existence of these two Societies, is ample evidence of the growing strength of our calling. Indeed, it is difficult to instance a profession that has made more rapid progress than has the veterinary profession, when it is recalled that the Royal College of Veterinary Surgeons came into being only in 1844, and that it was not until 1881 that the Veterinary Surgeons Act gave a real legal position to practitioners. This year there will come into force regulations which demand that the training of the veterinary student shall be extended to five years. This is a sign of progress and shows a desire to give a better and fuller training than has in the past been at the disposal of the student. We are told by educationists that there are several reasons for this extension of the curriculum, and that it is necessary to bring the profession into line with other professions. We all hope that it will be so. It is said that there never was a time when the study of veterinary science in every field was more important than it is at present, nor when there were more problems to be solved. Among those at present confronting the profession are, the control and eradication of tuberculosis in domesticated animals, and of johne's disease and epizoötic abortion in bovines. I also feel that much knowledge might be obtained by a thorough investigation of the parasitic flora of this country. It cannot be insisted upon too strongly that the veterinary scientist has his independent part to play in the solution of these and similar problems: when his researches are combined with those of other professions, much might be done to secure greater progress. We need, therefore, to be prepared for the strenuous times which we hope are in front of us, not only in supplying the ever-increasing needs of the Empire in efforts to create an efficient preventive veterinary service against animal epidemics, but also in training men to undertake the ever-necessary and wider duties of the general practitioner, who is, after all, the backbone of the profession.

There are many other points in present-day veterinary science which could be mentioned, but perhaps I have already trespassed long enough on your time and patience. I will therefore conclude these few remarks by reminding you that the success of the Association is the result of the

sum of the efforts of individual members. I earnestly hope that you will all co-operate with your Office-bearers in making this a successful year.

Mr. Powley proposed a hearty vote of thanks to the President for his painstaking address. He was pleased that reference had been made to the benevolent funds, as he had been very much impressed by the good work the benevolent Societies were doing. They were worthy of the support of every member of the profession, as one never knew whose turn it would be next. He was confident that the members of the "Lancashire" would give Mr. Spruell their loyal support, and he wished him a successful year of office.

Mr. Woods, in seconding the proposal, said it was a modest address and one that they expected from the new President.

MR. SPRUELL'S WORK AS HON. SECRETARY

Mr. Curbishley moved a vote of thanks to Mr. Spruell for his long and conscientious endeavours as Hon. Secretary of the "Lancashire." He had held that office for more than 12 years, and had done a tremendous amount of work on behalf of the Division.

Colonel Brittlebank said it was his privilege to second the motion, as he was responsible for asking Mr. Spruell to take over the office. His advice and services were beyond the praise they could give him, and he had worked hard at all times. The "Lancashire" had always occupied an important part in the life of the profession, and it was now up to the younger members to see that it did not lose its importance in directing veterinary politics and the well-being of every veterinary surgeon.

The proposals were put to the meeting and carried with acclamation.

CLINICAL DISCUSSION AND PATHOLOGICAL SPECIMENS

Mr. Mayall exhibited five small stones taken from the upper lip of a horse. It had been recorded, he stated, that stones had been found in the tonsils of a horse, but those exhibited were the only ones he had seen in the lip. They were removed from a horse 17 years old, weighing 18 cwts., and which cost £150. The animal had been gradually losing flesh for six months, but there had been no rise in temperature or increase in the pulse rate. The appetite was variable, the horse feeding well one day, and eating little another day. Tuberculosis was suspected, and the animal was tested with tuberculin intradermally and ocularly. No reaction was noted intradermally five hours after the second injection, but 15 hours afterwards a swelling 2 inches by 5½ inches was noted. Next morning the swelling measured 3½ inches by 8 inches. This reaction was considered positive and the animal slaughtered, and on *post-mortem* examination, lesions of tuberculosis were found in the spleen and kidney. There was no reaction to the ophthalmic test. He did not suggest that the concretions in the lip had any connection with tuberculosis.

Mr. Mayall referred to a number of cases recorded in the *Veterinary Record* for September 6th, 1931, by Mr. F. C. Scott, of Pontefract, in which tuberculosis was found in horses. He understood that in some cases the reaction was doubtful, and thought it would be gratifying if, by statistics, it could be ascertained what the reaction in the horse was, and whether it was a constant one or not.

Mr. Mayall gave particulars of a case of an ulcerous growth on the membrana nictitans of a horse. He operated and removed the growth, using a local anæsthetic, and he would like to know if any other member had had any experience of a similar condition or of cancer of the eye.

Mr. A. J. Wright described a peculiar case which he had recently experienced. The subject was a puppy, nine months old, which was perfectly normal in every way, but if anyone approached it and placed a hand on its hind quarters, the animal got very excited, growled, and went round in circles. On examination he could find nothing to account for this. There was no sign of eczema or skin irritation. Examination of the anal glands revealed nothing. The tail had been "docked" but was quite normal, and he could find no treatment to cure the condition. Answering a question by Mr. Mayall, Mr. Wright stated that the puppy had the usual mixed diet of a pet dog.

He went on to describe a condition which he found on being called to remove the fœtal membranes from a cow. The cow had had a single calf. She had never been out of the shippon, and there was no evidence or history of the passing of any rubbish or another mummified fœtus; yet there were two complete sets of membranes, and the uterus had the size and appearance of having held twin calves.

Referring to Mr. Mayall's case, Mr. Wright mentioned that he recently removed the membrana nictitans of a horse on which there was a large warty growth about the size of two walnuts.

Mr. J. Holroyd referred to a case of atypical anthrax reported recently in the *Veterinary Record*, and said that, in his opinion, the word "atypical" should not be used in this disease as, in his experience, 75 per cent. of anthrax cases did not conform to any set picture. He had had an outbreak recently in which six cows and a pig were affected in ten days. He saw every animal alive, and from the symptoms shown he could not have associated them with the same condition; but the case of the pig was worth relating. He had only seen one typical case in the pig previously—with swelling in the throat, etc.—but in the case referred to, one pig of a

litter was ill when he saw it on a Wednesday morning. On the Thursday and Friday the pig was apparently healthy, but on the Saturday it was off-colour again, and died on Sunday morning. There was no swelling of the throat at any time. Microscopical examinations of the blood, a smear of the blood, and a smear from the submaxillary lymphatic glands, proved negative to anthrax. He was so convinced that anthrax was present, however, that he made a *post-mortem* examination. This revealed an excessive amount of peritoneal fluid and a large lump in the mesenteric glands. Examination of a smear showed the presence of anthrax bacilli, and Mr. Holroyd contended that if the pig had not been on an anthrax-infected farm it would not have been reported as anthrax, and he suggested that many such cases were not recognised.

Mr. Powley stated that, in his experience of this disease, which was an extensive one, the usual form was swelling of the throat. He related an outbreak among 40 store pigs, three months old, all of which sat on their haunches, with enlarged throats and rather laboured breathing. It was known that the pigs had been fed on anthrax-infected carcasses. Only two died, and he thought that recovery was usual in some cases. On another occasion he saw 40 bullocks which had been on anthrax pasture. The farmer had decided to clean out the ditches and had found them full of bones. The same day there was a thunderstorm, and apparently the heavy rain had washed through the ditches and affected a pond at a lower level which was used by the animals for drinking purposes. He thought at one time that all the animals were going to die but, with one exception, they all recovered.

Mr. Shawcross agreed that a large percentage of anthrax cases recovered and quoted a case in an animal which developed a temperature of 105 deg. He gave anti-anthrax serum and the next day the animal had recovered. He asked what Mr. Holroyd would consider typical symptoms in an animal which had got past the initial temperature stage. He himself thought it was typical when an animal laid down and threw its head about.

Mr. Holroyd replied that he could not definitely answer Mr. Shawcross's question. He was always suspicious of anthrax unless he was definitely sure that an animal was suffering from some other condition. He would certainly not deal with any animal under the Anthrax Order unless he found anthrax bacilli.

Mr. Curbishley, referring to anthrax, said that if a farmer had had no time to call in a veterinary surgeon and he got a butcher to dress the animal, he would be liable to prosecution. But a veterinary surgeon would appear to be exempt from the provisions of the Order, even though he were to open the carcass.

Mr. Powley explained that a veterinary surgeon was presumed to have sufficient knowledge to carry out a proper examination, but a farmer was not presumed to have such knowledge and he was held to be guilty of negligence unless he could prove otherwise in a court of law.

A number of other members contributed to the general and informal clinical discussion which took place.

Lightning Stroke.—Mr. Noel Pillers reported that he had been asked on many occasions if the Division were going to have the questionnaire on Lightning Stroke printed and circulated. Mr. J. Holroyd proposed, Mr. R. C. Locke seconded, and it was unanimously resolved that the matter be left in the hands of the Committee for completion.

There being no other business, the meeting was concluded.

A. L. Mullen, *Hon. Secretary.*

Notes and News

DIARY OF EVENTS

May 23rd.—Meeting of Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, 4.30 p.m.

May 25th.—Meeting of the Scottish Metropolitan Division, N.V.M.A., at Edinburgh.

May 25th.—Meeting of the Lancashire Division, N.V.M.A., at Manchester.

May 26th.—R.C.V.S. Last day for receipt of Voting Papers.

May 26th.—Meeting of the Midland Counties Division, N.V.M.A., at Wolverhampton.

June 2nd.—R.C.V.S. Annual General Meeting. V.V.B. Fund Annual General Meeting.

June 2nd.—Meeting of the Central Division, N.V.M.A., at 10, Red Lion Square, W.C.1.

June 9th.—D.V.S.M. Written Examination begins.

June 10th.—R.A.V.C. Annual Dinner, Hotel Victoria.

June 13th.—D.V.S.M. Oral Examination begins.

June 29th.—R.C.V.S. Committee Meetings begin.

June 30th.—R.C.V.S. Annual Dinner.

July 1st.—R.C.V.S. Council Meetings.

July 6th.—R.C.V.S. Summer Examinations begin.

Aug. 11th.—Royal (Dick) V.C. Alumnus Lunch at Folkestone.

Aug. 8th-13th.—N.V.M.A. Jubilee Congress at Folkestone.

* * * * *

R.C.V.S. COUNCIL ELECTION

The Voting Papers for the election of nine members to the Council of the R.C.V.S. have been issued this week, and will by now be in the hands

of all members. They must be returned so as to reach the office of the College not later than the 26th inst. Voting Papers received after that date cannot be counted. There are 10 candidates for the nine vacancies, seven of whom are already members of the Council. The other three candidates are, Mr. R. E. Glover, of Cambridge, Major Hamilton Kirk, of London, and Capt. T. M. Mitchell, of Sunderland.

* * * * *

PERSONAL

Capt. H. E. Idenden, M.R.C.V.S., Senior Veterinary Officer, Trans-Jordan Frontier Force, has arrived in England on leave.

* * * * *

Wills.—Slocock, Mr. Sydney Howard, F.R.C.V.S. (71), of Hounslow (net personalty £6,648), £8,516.

Platt, Mr. James Ousey, of Southport, Lancs., retired veterinary surgeon (net personalty £1,347), £5,065.

* * * * *

R.C.V.S. OBITUARY

Brogan, Edward Henry, J.P., Government Veterinary Officer, Choma, Northern Rhodesia, South Africa. Graduated London, January 6th, 1908; died at Vryburg, British Bechuanaland, April 7th, 1932.

Burnfield, Alexander, Hazeldown, Stockbridge, Hants. Graduated Edinburgh, May 30th, 1891; died August 2nd, 1931.

Cundell, Francis Henry Willis. Overton House, Wroughton, Swindon, Wilts. Graduated Edinburgh, December 21st, 1900; died May 10th, 1932, aged 54 years.

Jones, Arthur Henry. Penrhadw House, Vaynor, near Merthyr Tydfil, South Wales. Graduated London, May 20th, 1891; died May 12th, 1932, aged 63 years.

White, John Branford. Hatfield Broad Oak, Harlow, Essex. Graduated London, April 30th, 1856; died May 8th, 1932, aged 98 years.

* * * * *

The late Mr. Frank Cundell

Mr. Frank Cundell, whose death occurred suddenly at Overton, near Swindon, was a well-known veterinary surgeon and racehorse owner.

He was keenly interested in breeding, and owned the Overton Stud at Wroughton, but he will be remembered chiefly as part-owner of Noble Star, who won the Cesarewitch, the Jockey Club Cup, the Ascot Stakes, and the Goodwood Stakes last year, and thus put up a record which may never be equalled.

Racehorse owning was, however, only a side issue in Mr. Cundell's busy career, as he found his chief pleasure and relaxation in treating horses which had broken down in training. To Mr. Cundell was entrusted the well-being of the crack steeplechaser Easter Hero, when he fell lame just before the Grand National of 1930.

* * * * *

The late Mr. John Branford White

The profession's oldest graduate—though not so old in years as another wonderful veteran happily still with us, Dr. Griffith Evans—has passed away, as recorded above, in Mr. John Branford White. Described by a fellow practitioner, who knew him well, as "a most lovable man, beloved and respected by everyone—a real English gentleman," Mr. White spent many years in Government service at Trinidad and on retiring and returning to England about thirty-five years ago he and his wife took up residence at the Priory, Hatfield Broad Oak. His wife died about five years afterwards. Later, when 75 years of age, he took Town Hall Farm, and actively superintended it until he was well over 90. He was an energetic man and when in his eighties frequently rode horseback fifty miles in a day attending to his farming interests.

At the funeral at the Parish Church at Hatfield, the mourners included his son, Dr. J. A. T. White, a medical practitioner in Hatfield district; Drs. F. N. Day, W. H. Booth, and L. J. Sheil, Dr. White's partners; and Messrs. H. E. T. Mason and P. Welch, veterinary surgeons at Bishop's Stortford, and Saffron Walden respectively.

* * * * *

MANSON MEDAL FOR DR. THEOBALD SMITH

Veterinarians in this country as well as those resident in the New World will learn with particular pleasure that the Manson Medal for tropical medical research, given triennially by the Royal Society of Tropical Medicine and Hygiene, has this year been awarded to Dr. Theobald Smith, Director of the department of animal pathology of the Rockefeller Institute of Medical Research, Princeton, New Jersey, U.S.A.

Theobald Smith's fame as an authority on comparative pathology is, of course, world wide. It was he who showed, as a result of his enquiry into the relations of bovine and human tuberculosis, that it was not the case that, as apparently appeared from the investigations of Koch, the human species might be immune, or comparatively immune, from the bovine bacillus. In association with Kilborne, in 1893, Theobald Smith showed that red-water fever in cattle was transmitted by ticks; indeed, he was the first to transfer the insect transmission theory of protozoal disease from the realms of hypothesis to those of established fact. In 1904 Theobald Smith reported anaphylactic symptoms in dogs and rabbits, and in a letter to Erlich wrote the original description of the classical anaphylactic shock in guinea-pigs, often known as the Theobald Smith phenomenon.

Dr. Theobald Smith is the author of frequent and highly-valued contributions to the *Journal of Experimental Medicine*, published by the Rockefeller Institute.

Those who were present at the Royal (Dick) College Centenary Celebrations in November, 1923, will have a treasured recollection of the masterly address on "Comparative Pathology: Its Biological and Economic Significance" given by Professor Theobald Smith on that memorable occasion.

* * * * *

QUARANTINE REGULATIONS CONTRAVENED

Dogs Landed by Air from France

At Tonbridge Police Court on Tuesday last, Brian Russell, an ex-R.A.F. Reserve pilot, was fined £25, with an alternative of two months' imprisonment, for "aiding and abetting the landing of two dogs from France at Capel on January 16th," and £100, with an alternative of three months' imprisonment, for making a false declaration on landing. The landing was made at Capel after a flight from Calais, where the dogs were taken on board.

* * * * *

ARMY VETERINARY SERVICE

London Gazette—War Office—Territorial Army

May 17th.—Major G. E. Henson, T.D. (since ret.), to be Bt. Lieut.-Colonel (May 18th).

* * * * *

The Royal Tournament

The staff for the Royal Tournament, which opens at Olympia on May 25th, will include Major W. B. Howe as Veterinary Officer.

"HORSE *versus* MOTOR TRANSPORT"

Mr. R. A. Brown, Secretary of the National Horse Association of Great Britain, writes:—

"You will no doubt be interested to learn that, as a result of your very kind reference to Leaflet No. 27 "Horse *versus* Motor Transport," in the *Veterinary Record* of April 30th, I have received so many letters for copies, that the entire edition of 2,000 copies has been exhausted, and I have had to order more to be printed. Perhaps it might be possible to make a short note in your next issue, that I apologise to all veterinary surgeons who have not yet received copies, but that I will send these as soon as I can."

* * * * *

LONDON CART HORSE PARADE

Princess Marie Louise attended the forty-second annual display of the London Cart Horse Parade Society, which, as usual, was held in the Inner Ring of Regent's Park on Whit-Monday. For two hours she watched the march past of nearly 700 well-groomed horses, mainly Shires and Suffolks, with their gaily painted vehicles, and as the winners came abreast of the platform on which she stood at York Gate she distributed the prizes. Long-service drivers, of whom there were over 50, were announced, and were cheered by a crowd of spectators.

The entries this year numbered 691, three fewer than a year ago, and spectators found themselves in agreement with the view expressed by some of the judges that the general turn-out of horses, harness, and vans was as attractive as any held in recent years. Leading firms and railway depôts in London which use horses in their distributive services were represented in the parade, and 72 of the horses were shown by local authorities, including the Corporation of London, the City of Westminster, the Royal Borough of Kensington, and the Borough Councils of Bethnal Green, Brentford and Chiswick, Finsbury, Paddington, Stepney, Stoke Newington, and Walthamstow.

* * * * *

RESEARCH FELLOWSHIPS IN TUBERCULOSIS

The Medical Research Council announces that the Dorothy Temple Cross Research Fellowships in Tuberculosis for the academic year, 1932-1933 will shortly be awarded by the Council, and applications should be lodged with the Council not later than June 1st, 1932.

The object of these Fellowships, as defined in the Trust Deed, is to give special opportunities for study and research to persons "intending to devote themselves to the advancement by teaching or research of curative or preventive treatment of tuberculosis in all or any of its forms." Candidates must be British subjects and must possess suitable medical, veterinary or scientific qualifications. They must also be able to produce satisfactory evidence of their ability to make good use of the opportunities offered by the Fellowships.

The Fellowships will preferably be awarded to candidates who wish to make their studies or enquiries outside the borders of Great Britain. They will be awarded for one year as a rule, but in special cases may be renewed. The value of the Fellowships awarded will depend in each case upon the standing and qualifications of the candidate, but will not be less than £350 per annum, payable monthly in advance. Travelling and some incidental expenses will be paid in addition.

It may also be possible to award a Senior Fellowship of considerably greater value to a specially well qualified candidate wishing to undertake an intensive study of some particular problem of tuberculosis at a chosen centre of work in another country.

Further particulars and forms of application are obtainable from the Secretary, Medical Research Council, 38, Old Queen Street, Westminster, S.W.1.

* * * * *

TUBERCULIN TESTED HERDS IN SCOTLAND

In the extract (published in our last issue) from the Annual Report of the Hannah Dairy Research Institute, entitled "Tuberculin Tested Herds in Scotland," it is stated that the number of herds in the experimental eradication scheme totals 22. This number should read 32.

* * * * *

"*Central Provinces Veterinary Journal.*"—For a veterinary association to undertake the publication of a quarterly journal is an enterprise as courageous as it is laudable, and the contents of the inaugural number of this journal, issued in January last, demonstrate that this little periodical is likely to prove of interest and value to the members of the Association under the auspices of which it is produced.

IN PARLIAMENT

EXPORTATION OF HORSES BILL

The above Bill "to amend the Law with respect to the exportation of horses; and for purposes connected therewith," was presented to the House of Commons by Lieut.-Colonel Moore on May 9th, and was read a second time on May 12th.

. . . . .

The following questions and answers have been recorded in the House of Commons recently:—

IMPORT DUTIES ACT (HORSES)

Major Carver asked the Minister of Agriculture if he can state for what reason horses were included in the Free List of the Import Duties Act; and whether, in view of the fact that the cost of living would not be affected by their exclusion therefrom, he intends to make any representations to the Tariff Advisory Committee in the matter?

Sir J. Gilmour: Horses are included in the Free List mainly in view of the fact that in terms of value the great bulk of the imports consists of thoroughbred horses and mares imported for breeding and racing purposes. The answer to the last part of the question is in the negative.

. . . . .

HORSES (EXPORT)

Sir Robert Gower asked the Minister of Agriculture whether he was aware that, out of a consignment of three heavy draught horses which were shipped by the British steamship "Mersey" from Goole to Rotterdam, it was found on their arrival here on April 18th that one had died en route and another was found to be suffering from such injuries sustained en route that it was necessary to shoot it immediately; whether he will state the circumstances under which the two horses sustained their injuries; and whether he will consider the desirability of introducing legislation prohibiting the export of such horses from this country abroad?

Sir J. Gilmour: I am aware of the two casualties referred to. I understand that the three horses were shipped at Goole on April 16th, after passing the usual rigid veterinary examination as to fitness to travel and to work. There was no indication that abnormally rough weather would be encountered. The vessel, however, met heavy seas,

resulting in two of the horses going down in their stalls, about five hours after leaving port. The vessel was eased, but attempts to get the horses on to their legs were unsuccessful. Each horse was made as comfortable as possible with bedding and padded sacks. One horse died, but from information supplied by the shipping company, it appears that it was not injured in any way, and showed no sign of any suffering. The other horse showed signs of great excitement, and was then killed with the humane killer to prevent it from injuring itself. As regards the last part of the question, I am satisfied that the present legislation is adequate to prevent avoidable suffering.

Mr. T. Williams: Does the right hon. Gentleman not think it is high time that we dispensed altogether with this miserable trade?

Sir J. Gilmour: All I can say is that the number of casualties arising out of the trade, under the present regulations, is comparatively small—only 44 out of 45,745 horses exported.

Lieut.-Colonel Moore: Will the right hon. Gentleman advise the Government to give facilities to a private Member's Bill to stop this trade?

Mr. Macquisten: Is it not the case that the horse is an animal that suffers extraordinary agonies from seasickness, and is it not desirable that the putting of horses on board ship should be limited as much as possible?

Sir J. Gilmour: That is the case under the present regulations.

Captain Heilgers asked the Minister of Agriculture whether the veterinary officer, exportation of horses, now dispensed with owing to the economies of his Department, has been replaced by one of the existing veterinary inspectors?

Sir J. Gilmour: It was found possible, in the course of economies effected last autumn, to reduce by two the number of veterinary officers engaged at ports on the service mentioned. The work was taken over by veterinary inspectors on the staff of the Department in conjunction with their other duties. The efficiency of the service has been in no way affected by these economies.

Captain Heilgers: Will not the right hon. Gentleman take steps to put an end to this cruel and unnecessary traffic in old horses?

. . . . . .

Sir R. Gower asked the Minister of Agriculture how many horses were exported to the Continent from this country for butchery during each of the past six months; from which ports, respectively, they were exported; and at what slaughterhouses, respectively, the same were killed and in what manner?

Sir J. Gilmour: The following statement shows the number of horses exported to the Continent during the six months ended March 31st, 1932, the number intended for immediate slaughter; the ports whence they were shipped and the ports of destination. No statutory declaration is required as to the purpose for which horses are shipped, and the numbers given as being intended for immediate slaughter are derived from information obtained by the Ministry's inspectors.

I have no precise information as to the individual slaughterhouses to which the animals were sent. I am informed that all the horses slaughtered at the Boulogne abattoir are killed by the mechanical killer. In Holland the use of the mechanical killer at all slaughterhouses is required by law.

. . . . . .

HORSE TRAFFIC (TAXATION)

Mr. Chalmers asked the Chancellor of the Exchequer whether, since horse traffic does as much damage to the roads as motor traffic, he will consider taxing horse traffic according to load, similarly to motor traffic?

Major Elliot: I am unable to accept the assumption made by my hon. Friend in the first part of his question, and the second part does not therefore arise.

. . . . . .

MUSK RATS

Mr. McEntee asked the Minister of Agriculture how many persons have applied for a licence to keep musk rats; and if any estimate has been made as to the numbers of these animals at liberty in Britain and outside the control of commercial breeders?

The Minister of Agriculture (Sir J. Gilmour): Ten persons in England and Wales have applied for and been granted licences to keep musk rats, and others have paid the prescribed fee but have not yet made formal application or supplied the necessary information to enable a licence to be issued. I am not aware of any reliable estimate having been made of the number of musk rats at large in this country.

. . . . . .

BEEF (GRADING AND MARKING)

Major Carver asked the Minister of Agriculture whether it is his intention to introduce in the near future any scheme for the compulsory grading and marking of meat, in accordance with the recommendation of the Inter-Departmental Committee on this subject?

Sir J. Gilmour: The report of the second Inter-Departmental Committee on the Grading and

Port of Shipment.	October.		November.		December.		January.		February.		March.		Totals.		Destination and Port of Arrival for immediate slaughter.
	Number shipped.	Number for immediate slaughter.	Number shipped.	Number for Immediate slaughter.	Number shipped.	Number for immediate slaughter.	Number shipped.	Number for immediate Slaughter.	Number shipped.	Number for immediate slaughter.	Number shipped.	Number for immediate slaughter.	Number shipped.	Number for Immediate slaughter.	
Folkestone ...	229	—	373	—	72	—	52	7	290	10	14	6	1,030	23	Boulogne
Goole ...	94	31	14	14	21	12	20	5	96	—	101	2	346	64	Rotterdam
Harwich ...	154	—	20	—	77	—	68	—	69	—	157	—	545	—	
Hull	41	8	10	8	11	9	31	6	1	1	7	5	101	37	Rotterdam
Leith ...	186	166	195	195	117	90	38	37	49	38	31	20	616	546	Rotterdam—511 Amsterdam—35
London ...	191	166	102	88	50	46	110	104	61	45	51	40	565	489	Rotterdam
Totals ...	895	371	714	305	348	157	319	159	566	94	361	73	3,203	1,159	

Marking of Beef has only recently been submitted. The recommendations will receive the careful consideration of the Ministers concerned, but it is not possible at present to make any statement on the subject.

. . . . .

OATS AND BARLEY (FEEDING, LIVESTOCK)

Viscountess Astor asked the Minister of Agriculture approximately the amount of oats sold off farms in each of the last three years which it is estimated was used for feeding to livestock?

Sir J. Gilmour: The following table shows the estimated quantity of oats sold off farms in Great Britain in each of the three cereal years 1928-29, 1929-30 and 1930-31. These figures are based on estimates obtained in connection with the census taken in 1925 that 25 per cent. of the total crop in England and Wales, and 40 per cent. in Scotland, are sold off. I am unable to say what proportion of the crop sold off farms is actually used for feeding to livestock, although according to the Report on the Food Supplies of Great Britain prepared in 1929 the bulk of the crop is so used, about 142,000 tons (including imported oats) being diverted to manufacturing purposes.

Year Sept.-Aug.	England and Wales. Tons.	Scotland. Tons.	Great Britain. Tons.
1928-29 ...	361,000 ...	282,000 ...	643,000
1929-30 ...	380,000 ...	302,000 ...	682,000
1930-31 ...	335,000 ...	259,000 ...	594,000

Viscountess Astor asked the Minister of Agriculture approximately the amount of barley sold off farms in each of the last three years which it is estimated was used for feeding to livestock other than the barley fed to livestock after having been first used by the brewers or distillers?

Sir J. Gilmour: The following table shows the estimated quantity of barley sold off farms in Great Britain in each of the three cereal years 1928-29, 1929-30 and 1930-31. These figures are based on estimates obtained in connection with the census taken in 1925 that 65 per cent. of the total crop in England and Wales, and 78 per cent. in Scotland, are sold off. I am unable to say what proportion of the crop sold off is actually fed to livestock.

Year Sept.-Aug.	England and Wales. Tons.	Scotland. Tons.	Great Britain. Tons.
1928-29 ...	662,000 ...	80,000 ...	742,000
1929-30 ...	649,000 ...	79,000 ...	728,000
1930-31 ...	479,000 ...	74,000 ...	553,000

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

* * * * *

TUBERCLE BACILLI IN BOVINE SPUTUM

To the Editor of the Veterinary Record.

Sir,—It is now only left for me to express my thanks to Mr. H. L. Torrance and Mr. W. Tweed, as well as to the three other gentlemen who have written me personally on the above question. I can only wish the latter had decided to express their views in the columns of the *Veterinary Record*. The letter appearing in your current issue over the signature of Major Rabagliati adds still further to our information.

It would seem that I am only now called upon to supply the references asked for by Mr. Torrance, and to add that it will be my pleasure to meet and discuss with him further those interesting and informative points which have evolved as a result of the correspondence.

Mr. Torrance and others interested will find information in the following references:—

Brüning, Hermann. (1906). "Beiträge zur Lehre der natürlichen und künstlichen Saüglingsernahrung." *Zeitschr. f. Tiermed.* Vol 10. N.S. pt. 3, pp. 198-231, and pt. 4, pp. 277-301.

Griffith, A. S. (1913). "Human Tubercle Bacilli in the Milk of a Vaccinated Cow." *J. Path. Bact.* Vol. 17, p. 323.

———. (1917). "An Investigation of Strains of Tubercle Bacilli from Animal Tuberculosis." *Ibid.* Vol. 21, p. 329.

Meyer, L. (1906). "Uber das Verhalten des Kuheuters gegenüber Künstlicher Infektion mit Rinder — und Menschen — tuberkelbazillen. *Zeitschr. f. Tiermed.* Vol. 10. N.S. pt. 3, pp. 161-197, and pt. 4, pp. 241-276.

Royal Commission on Tuberculosis. (1907). 2nd Interim Report, Vol. 11. "The Virulence of Tubercle Bacilli of Human Origin for the Ox Species." p. 1026.
"Culture Injections into Calves." p. 1042.
"Feeding Experiments on Bovines." p. 1060.
"The Relative Susceptibility of Different Species of Animals to Tubercle Bacilli of Human and Bovine Origin." p. 1211.

Yours faithfully,

Geo. W. Dunkin.

Rhodes Farm,
Mill Hill,
N.W.7.
May 17th, 1932.

* * * * *

RINGBONE

To the Editor of the Veterinary Record.

Sir,—Surely the obvious method of differentiation between "mechanical lameness" and a claudication associated with pain is the application of a local anæsthetic? Without this aid it is practically impossible for any diagnostician, however experienced, to give a positive opinion as to the absence or presence of pain.

I have for long held the opinion that the lameness associated with large peri-articular "ringbone" is often partly due to the fibrous anchylosis commonly met with in these cases. This may be partly mechanical but is often somewhat painful in addition. That the lameness is frequently due to fibrous adhesions seems to me to be shewn by the quite frequent recovery of those cases when kept at work on the land, whereas turning out to grass, *i.e.*, complete rest, very frequently aggravates the lameness; theconstant work breaking down the adhesions whilst enforced idleness allows them to become more dense. One case, a dairyman's pony, worked for ten years after plantar neurectomy had been performed for the relief of acute lameness arising from the presence of an immense ringbone, although sensation had been re-established by collateral branches within eighteen months of the operation. There was

never any very great amount of resorption of the osseous deposit and I have always attributed her permanent recovery from lameness to the breakdown of fibrous adhesions around the fetlock and pastern joints during the time the limb remained anæsthetised.

On another occasion I was asked to "un-nerve" a Shire gelding which had a very large periarticular ringbone and advised against the operation as I was of opinion that the lameness was due to mechanical fixation of the pastern joint. The owner, however, insisted upon the operation being performed, taking the risk of its failure. To prove that my diagnosis of "painless mechanical lameness" was wrong, the animal got up sound from the casting bed and worked "sound" for two years.

I am personally mechanically lame from repeated fractures of my left foot, but the lameness is certainly not at all times free from pain!

Yours faithfully,

David Eric Wilkinson.

Oakwood,
Chigwell,
Essex.
May 13th, 1932.

. . . . . .

To the Editor of the Veterinary Record.

Sir,—This question of ringbone, pain and lameness opens up a big field for discussion and cannot be dealt with adequately in a letter. If only some of the older town clinicians would get together at a sort of round table conference and express their opinions, what a store of information we should have!

There are no different classes of ringbone—its position may be, and often is, different—but ringbone is ringbone and if we think of its pathology and its analogy to rheumatoid arthritis of the human being, then we know that pain does, and must, exist during the process of formation and until arrest of the inflammatory process has been brought about.

Lameness can and does exist without pain: one has only to stand a short time in one of the busy streets and watch the number of lame people who suffer no pain.

Lameness is an abnormality of gait which may or may not be associated with pain.

J. P. Railton.

Kington,
Herefordshire.
May 17th, 1932.

* * * * *

SEXUAL ABNORMALITY

To the Editor of the Veterinary Record.

Sir,—Perhaps the following case may interest your readers: it is a puzzle to me and the conditions seem almost incredible.

A lady client brought a rough-haired fox-terrier dog to me this week and asked my opinion of a phenomenon which has existed for some time and lately has developed to a most objectionable extent.

He is a dog of about eight years of age and wherever he goes he promptly causes sexual excitement in other dogs. They behave to him as they would to a bitch in season and mount him even when he is on the lead. This treatment is strongly resented by the unfortunate animal. Another peculiar feature is assumption of an abnormal size by the teats; one could almost imagine the animal was a bitch which had shortly weaned her pups, except that the mammary glands are not enlarged.

One hears wonderful stories of cockerels developing into hens—or at any rate laying eggs; such statements want verifying, but *this* freak is here to be seen by any Northern practitioner who cares to visit me. He is boarding here for a few days. I should like to have the opinion of any member who would enlighten me about him.

Yours sincerely,

J. P. Isherwood, m.r.c.v.s.

2, Holly Avenue,
Whitley Bay.
May 14th, 1932.

Diseases of Animals Acts, 1894 to 1927

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
Period 16th to 30th April, 1932	No. 21	No. 25	No. 2	No. 160	No. 1	No. 5	No. 5	No. 100	No. 59
Corresponding period in 1931	38	40	—	—	4	7	16	97	57
1930	24	28	—	—	8	12	3	117	48
1929	26	28	—	—	7	17	13	87	53
Total 1st January to 30th April, 1932	163	209	3	227	64	114	116	721	331
Corresponding period in 1931	208	222	5	515	70	120	154	525	215
1930	170	181	—	—	118	181	234	884	349
1929	168	189	20	1,804	120	240	290	478	218